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(U.S.) Environmental Protection Agency, Washington, DC

May 90

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Background Document For Third Third Wastes To Support 40 CFR Part 268 Land Disposal Restrictions

PB90-234717

Third Third Waste Volumes, Characteristics, and Required and Available Treatment Capacity

Volume IV

APPENDIX J - APPENDIX M

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BACKGROUND DOCUMENT FOR THIRD THIRD WASTES TO SUPPORT 40 CFR PART 268 LAND DISPOSAL RESTRICTIONS

FINAL RULE

THIRD THIRD WASTE VOLUMES, CHARACTERISTICS, AND REQUIRED AND AVAILABLE TREATMENT CAPACITY

Volume IV

CHAPTER 4
APPENDIX J - APPENDIX M

U.S. Environmental Protection Agency
Office of Solid Waste
401 M Street, S.W.
Washington, D.C. 20460

May 1990

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ANALYSIS OF COMMERCIAL ALKALINE CHLORINATION/ CHEMICAL PRECIPITATION CAPACITY

APPENDIX J

ANALYSIS OF COMMERCIAL ALKALINE CHLORINATION/CHEMICAL PRECIPITATION CAPACITY

(all data in gallons per year)

To verify projected capacities reported in the TSDR Survey, EPA contacted the facilities that anticipated in 1989 additional available capacity for alkaline chlorination followed by chemical precipitation. Based on the information provided by the facility contacts, EPA has determined that four facilities (American Waste Processing LTD (ILD00716894), Envirite Corporation (PAD004835146), Mill Services Inc Yukon Plant (PAD004835146), and OSCO Treatment Systems Inc. (TND980515779)) did not come on-line as projected. For two facilities (Envirite Corporation (PAD004835146) and Mill Services Inc. (PAD059087072)), available capacity data are adjusted based on the additional information provided by the facilities and by engineering judgement. For one facility (Cyano Kem (MID09801192), the available capacity is updated based on the information provided in the comment letter (Letter Number LD12-00110 dated January 5, 1990) submitted by the facility. As a result of the facility contacts and other information made available during the comment period, 1989 available capacity data have been adjusted to reflect this additional information as shown in Table 1.

Table 1. Capacity Analysis For Alkaline Chlorination/Chemical Precipitation.

Total available capacity for 1989-90 (p. 79[1])	=	51,806,241
Add capacity of Mill Service's gen. chem. precip. process (p.90)[2]	= +	2,334,240
Add additional capacity from comment letter L59[3] for Cyano Kem	= +	1,000,000
Add additional capacity for USPCI, Waynoka, OK[4,5]	= +	884,000
Deduct capacity reported by American Waste Processing	= -	15,000,000
Deduct capacity reported by Osco Treatment Systems	= -	1,300,000
Deduct capacity reported by Envirite(expansion for 89-90)	= -	12,000,000
Deduct loss of capacity reported by Envirite for 1988[6]	= -	3,203,640
Deduct capacity reported by Mill Services Yukon Plant	= -	2,400,000
Total available capacity	=	22,120,841
Deduct required capacity for the previous rules	= -	11,000,000
Remaining capacity for Third Third wastes	=	11,120,841

---

[1] All page numbers refer to Commercial Treatment/Recovery Capacity Data Set. November 1989. Prepared for the Office of Solid Waste. Washington, D.C.: U.S. Environmental Protection Agency.

[2] One of the systems of this facility is categories as general chemical precipitation. A review of the schematics and survey indicated that this system has the capacity for alkaline chlorination as well as chemical precipitation.

[3] This commenter stated that they have about 13.8 million gallons per year maximum capacity at this facility. Of this, 12.8 million gallons per year is already reported in the TSDR Survey. The remainder is incorporated in the capacity analysis (p. 78).

[4] Basis is provided in phone logs for the details of discussion with facility contacts.

[5] The available capacity is about 85% of annual maximum capacity (1,040,000 gallons). The maximum capacity is calculated at the rate of 4,000 gallons per day for 260 days.

[6] This loss of capacity is due to mis-coding of the TSDR Survey information in the data set. The actual available capacity of the facility is arrived as follows: The maximum annual capacity for alkaline chlorination followed by chemical precipitation is 25% (4,260,000 gallons) of facilities maximum annual capacity (17,040,000 gallons). Only 25% (based on annual maximum capacity and utilization at the facility) of this capacity is available capacity for alkaline chlorination and chemical precipitation. The loss of capacity (3,203,640 gallons) is the difference of the available capacity reported in the data set (4,268,640 gallons) and actual available capacity calculated (1,065,000 gallons) above.

PHONE LOG FOR
FACILITY CONTACTS

Caller: Ravindra Sannareddy

Name of Contact: Craig Bruell

Phone Number: 405-697-3236

Title:

Location: USPCI, Waynoka (OKD065438376)

Date: April 24, 1990, 4.25 p.m.

Purpose of Call: Obtain the information on the permitted capacity for the following process.

Alkaline Chlorination/Chemical Precipitation

Report on Discussion:

1. The maximum capacity of the process at this facility is waste dependent. The maximum capacity varies from 2,000 gallons per day to 6,000 gallons per day.
2. The current utilization of this process is about 10% to 20% of the maximum capacity.

Any Follow up Planned:

PHONE LOG FOR
FACILITY CONTACTS

Caller: Ravindra Sannareddy

Name of Contact: Joseph A Strosnik

Phone Number: 708-681-3999 (708-278-3999)

Title: Project Engineer

Location: American Waste Processing (ILD000716894)

Date: March 20, 1990, 11.00 a.m.

Purpose of Call: Obtain the information on the permitted capacity for the following process.

Alkaline Chlorination/Chemical Precipitation

Report on Discussion:

1. The planned treatment process with a maximum annual capacity of 15 million gallons for 1988 never came on-line.
2. The facility has dropped the plans of expansion and, hence, the capacity reported in the TSDR Survey will not be available in the future.

Any Follow up Planned:

PHONE LOG FOR
FACILITY CONTACTS

Caller: Ravindra Sannareddy

Name of Contact: Samuel J. Campagna

Phone Number: 615-381-1058

Title: Director of Environmental Services

Location: Osco Treatment Systems Inc. (TND980515779)

Date: April 20, 1990, 4.30 p.m.

Purpose of Call: Obtain the information on the permitted capacity for the following processes.

Alkaline Chlorination/Chemical Precipitation

Report on Discussion:

1. The planned treatment process (maximum annual capacity of 1.3 million gallons in 1988) never came on-line.
2. The facility has plans to bring about 150,000 - 250,000 gallons per year capacity by October 1990.

Any Follow up Planned:

PHONE LOG FOR

FACILITY CONTACTS

Caller: Ravindra Sannareddy

Name of Contact: Curvin Snyder III

Phone Number: 717-846-1900

Title: Operation Manager

Location: Envirite Corporation (PAD010154045)

Date: April 24, 1990, 10.30 a.m.

Purpose of Call: Obtain the information on the permitted capacity for the following process.

Alkaline Chlorination/Chemical Precipitation

Report on Discussion:

1. The planned treatment process (maximum annual capacity of 12 million gallons in 1989-90) never came on-line.
2. The facility operates in a batch process with a capacity of 50,000 to 65,000 gallons per day (i.e., 71,000 tons per year as reported in TSDR Survey). Only 20-25% of this capacity is available for alkaline chlorination, even if there is demand for more capacity. The remaining 75% of the capacity is utilized by chrome reduction using ferric sulfate (up to 25% of total capacity), neutralization and other wastewater treatment processes available at the facility (up to 50%).
3. It looks like there is a decline in the amount of liquid wastes they are receiving at the facility.

Any Follow up Planned:

PHONE LOG FOR
FACILITY CONTACTS

Caller: Ravindra Sannareddy

Name of Contact: Gary Berman

Phone Number: 412-343-4900

Title:

Location: Mill Services Inc Yukon Plant (PAD059087072)

Date: April 25, 1990, 10.25 a.m.

Purpose of Call: Obtain the information on the permitted capacity for the following process.

Alkaline Chlorination/Chemical Precipitation

Report on Discussion:

1. The State of Pennsylvania did not authorize the treatment of cyanide wastes at this facility and, hence, the facility did not expand for the above process as planned.
2. Mr. Berman said that they don't have any customers for the above process; they will pursue their permit application if there is demand.

Any Follow up Planned:

APPENDIX K

Analysis of Commercial Sludge/Solid Combustion Capacity

K.1. INTRODUCTION

During the public comment period for the proposed Third Third rule, EPA received several comments on available sludge/solid combustion capacity. Commenters indicated that EPA had omitted available units, included units that may not actually be available, and incorrectly estimated capacity for some units. Sources of suggested error included new operating parameters resulting from permits issued since the TSDR Survey, and new hazardous fuel blending and burning techniques that increase capacity for reusing sludges and solids as fuel. Since the statutory deadline for incineration permit decisions passed in November of 1989, EPA agreed that recent permits could have affected national incineration capacity. As a result, EPA has obtained updated information from EPA regional and state environmental regulatory offices (and in a few cases from the incineration facilities) and has reevaluated available sludge/solid combustion capacity based on these data. This Appendix discusses EPA's sludge/solid combustion capacity verification analysis.

EPA first compiled lists of commercial incineration facilities in each EPA region. These lists contained more than 150 facilities identified from the TSDR Capacity Data Set, commercially published literature, public comments on the proposed Third Third rule and other sources. EPA contacted regional and state environmental regulatory officials to determine the operating and commercial status of each facility on the lists, and identify commercial facilities that burn or plan to burn sludges and solids. Regional and state contacts indicated that many of these facilities were planned commercial incinerators at various stages of development. EPA found many of these facilities to be non-commercial incinerators that burn wastes generated on-site (on-site facilities) or off-site facilities under the same ownership (company captive facilities). A few facilities were identified as hazardous waste fuel burners, reportedly burning liquids only, or specialized material recovery facilities units that are not truly commercial since they accept a very limited variety of wastes. Permitting officials indicated that some planned commercial incinerators appear to be inactive or abandoned.

Through contacts with the regional and state regulatory agencies, EPA has verified 12 currently operating truly commercial hazardous waste incineration facilities having sludge/solid capacity. Alchem-Tron is excluded from this group since its operation will be delayed until 1991 while it awaits a state permit. The following facilities have been omitted from the data set since the proposed rule since they are not truly commercial hazardous waste incinerators:

- RFE Industries in New Jersey is a materials recovery facility that does not accept wastes from the general public for incineration.
- BDT, Incorporated in Clarence, New York is a small metals recovery facility.
- Groce Laboratories in Greer, South Carolina operates several small research units.

Table K-1 summarizes the revised commercial sludge/solid incineration capacity estimates. This table provides the 1986 utilized capacity obtained from the TSDR Capacity Data Set and used for the final rule. It also shows the maximum capacity estimates reported in the TSDR Capacity Data and used for the proposed rule; along with the revised maximum sludge/solid capacity estimates used for the final rule. Table K-2 presents revisions to the commercial sludge/solid reuse as fuel capacity data since the proposed rule. The aggregated sludge/solid reuse as fuel capacity estimate includes all estimates obtained from the TSDR Capacity Data Set, including CBI facilities. Facilities presented individually on this table are discussed in Section K.4.

The remainder of this Appendix describes EPA's method of determining maximum, or design capacity to burn sludges and solids at currently operating and planned commercial incinerators that burn sludges and solids. It also describes EPA's analysis of the three Ash Grove Cement Company facilities that were identified as burning sludges and solids during the public comment period, and updated information on several reuse as fuel facilities reported in the TSDR Capacity Data Set. It includes the following sections:

- **Section K.2: General Methodology and Assumptions for Commercial Incinerators**: This section describes general methodology and assumptions used to analyze sludge/solid incineration capacity. It discusses the type of capacity data generally obtained from regional and state officials, and the methods used to estimate annual maximum sludge/solid capacity from this data.

- **Section K.3: Individual Incineration Facility Analyses**: This section separately discusses EPA's analysis of each incineration facility.

- **Section K.4: Sludge/Solid Reuse as Fuel Analysis**: This section discusses EPA's analysis of sludge/solid reuse as fuel capacity at Ash Grove Cement Company facilities. It also describes updates to other reuse as fuel facilities reported in the TSDR Capacity Data Set.

- **Section K.5: Planned Incineration Capacity Additions**: This section discusses the status and capacity of incineration units that EPA expects to come on-line by the end of 1992. It also lists planned additions reported in the TSDR Capacity Data Set for 1989 through 1992 that EPA believes will be delayed beyond 1992.

- **Section K.6: Phone Logs**: This section contains logs of each conversation that provided data used EPA's sludge/solid combustion capacity verification analysis. Calls are organized chronologically for each EPA region. Calls to facilities are logged at the end of this section.

TABLE K-1
SUMMARY OF COMMERCIAL SLUDGE/SOLID INCINERATION CAPACITY THROUGH 1992

NAME	UNIT TYPE\1	1986 UTILIZED CAPACITY (TONS/YR)	MAXIMMUM CAPACITY FROM TSDR CAPACITY DATA SET (TONS/YR)	MAY 1990 MAXIMUM CAPACITY (TONS/YR)	MAY 1990 AVAILABLE CAPACITY (TONS/YR)	DEC 1990 MAXIMUM CAPACITY (TONS/YR)	DEC 1990 AVAILABLE CAPACITY (TONS/YR)	DEC 1991 MAXIMUM CAPACITY (TONS/YR)	DEC 1991 AVAILABLE CAPACITY (TONS/YR)	DEC 1992 MAXIMUM CAPACITY (TONS/YR)	DEC 1992 AVAILABLE CAPACITY (TONS/YR)
ALCHEM-TRON, INC. CLEVELAND, OH OHD980568438	IR	0	38,800	0	0	0	0	28,800	28,800	28,800	28,800
APTUS COFFEEVILLE, KS KSD981506025	RK	0	0	0	0	0	0	27,000	27,000	27,000	27,000
APTUS (WESTINGHOUSE) TOELE, UT	RR	0	0	0	0	0	0	30,600	30,600	30,600	30,600
CALIFORNIA THERMAL TREATMENT VERNON, CA	RK	0	0	0	0	0	0	0	0	18,875	18,875
CHEMICAL WASTE MANAGEMENT KETTLEMAN HILLS, CA	RK	0	0	0	0	0	0	0	0	27,760	27,760
CHEMICAL WASTE MANAGEMENT SAUGET, IL ILD098642424	FH FH FH MRK	CBI CBI CBI 0	CBI CBI 0 0	1,800 1,800 1,800 29,358	CBI CBI CBI 29,358	1,800 1,800 1,800 29,358	CBI CBI CBI 29,358	1,800 1,800 1,800 29,358	CBI CBI CBI 29,358	1,800 1,800 1,800 29,358	CBI CBI CBI 29,358
CHEMICAL WASTE MANAGEMENT (SCA) CHICAGO, IL ILD000672121	RK	CBI	CBI	16,084	CBI	16,084	CBI	16,084	CBI	16,084	CBI
CHEMICAL WASTE MANAGEMENT PORT ARTHUR, TX TXD000838896	RK	CBI	CBI	0	0	126,100	CBI	126,100	CBI	126,100	CBI
ENSCO MARACOPA, AZ	MRK MRK MRK	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	12,600 12,600 12,600	12,600 12,600 12,600	12,600 12,600 12,600	12,600 12,600 12,600
ENVIRONMENTAL SYSTEMS CO. ELDORADO, AR ARD069748192	RK RK MRK	20,870 0 0	21,179 6,000 0	39,600 0 14,400	19,030 0 14,400	39,600 0 14,400	19,030 0 14,400	39,600 0 14,400	19,030 0 14,400	39,600 0 14,400	19,030 0 14,400
FLORIDA FIRST POLK COUNTY, FL	RK	0	0	0	0	0	0	0	0	27,705	27,705
LWD, INC. CALVERT, KY KYD088438817	CBI CBI	CBI CBI	CBI CBI	3,312 30,438	CBI CBI	3,312 30,438	CBI CBI	3,312 30,438	CBI CBI	3,312 30,438	CBI CBI
ROLLINS ENVIRONMENTAL SERVICES BATON ROUGE, LA LAD010395127	RK	556	21,400	31,784	31,229	31,784	31,229	31,784	31,229	31,784	31,229
ROLLINS ENVIRONMENTAL SERVICES BRIDGEPORT, NJ NJD053288239	RK RK	7,100 0	10,000 0	15,560 0	8,480 0	15,560 0	8,480 0	15,560 0	8,480 0	15,560 10,400	8,480 10,400
ROLLINS ENVIRONMENTAL SERVICES DEER PARK, TX TXD055141378	RK RK RR RR	16,324 0 0 0	41,122 42,850 0 0	32,400 35,640 32,400 0	17,078 35,640 32,400 0	32,400 35,640 32,400 0	17,078 35,640 32,400 0	32,400 35,640 32,400 0	17,078 35,640 32,400 0	32,400 35,640 32,400 0	17,078 35,640 32,400 0

TABLE K-1
SUMMARY OF COMMERCIAL SLUDGE/SOLID INCINERATION CAPACITY THROUGH 1992

NAME	UNIT TYPE\1	1988 UTILIZED CAPACITY (TONS/YR)	MAXIMUM CAPACITY FROM TSDR CAPACITY DATA SET (TONS/YR)	MAY 1990 MAXIMUM CAPACITY (TONS/YR)	MAY 1990 AVAILABLE CAPACITY (TONS/YR)	DEC 1990 MAXIMUM CAPACITY (TONS/YR)	DEC 1990 AVAILABLE CAPACITY (TONS/YR)	DEC 1991 MAXIMUM CAPACITY (TONS/YR)	DEC 1991 AVAILABLE CAPACITY (TONS/YR)	DEC 1992 MAXIMUM CAPACITY (TONS/YR)	DEC 1992 AVAILABLE CAPACITY (TONS/YR)
ROSS INCINERATION SERVICES GRAFTON, OH OHD048415665	CBI	CBI	CBI	16,200	CBI	16,200	CBI	16,200	CBI	16,200	CBI
RHONE-POULENC BASIC CHEMICALS (FORMERLY STAUFFER CHEMICAL) HOUSTON, TX TXD008099079	SR	0	0	0	0	58,320	58,320	58,320	58,320	58,320	58,320
RHONE-POULENC BASIC CHEMICALS (FORMERLY STAUFFER CHEMICAL) BATON ROUGE, LA LAD008161234	SR SR	0 0	0 0	0 0	0 0	60,147 108,266	60,147 108,266	60,147 108,266	60,147 108,266	60,147 108,266	60,147 108,266
THERMALKEM ROCK HILL, SC SCD044442333	FH	11,780	17,528	18,427	6,637	18,427	6,637	18,427	6,637	18,427	6,637
USPCI TOELE, UT	INCHOW	0	0	0	0	0	0	0	0	12,586	12,586
WASTE-TECH KIMBALL, NE	FB	0	0	0	0	0	0	0	0	4,500	4,500
AGGREGATE CBI		26,121	36,408								
TOTAL (TONS/YEAR)		81,400	234,378	320,003	168,109	671,835	394,841	796,736	618,741	896,580	618,568

NOTES:

1 Unit Types:
IR – Infrared Unit
FB – Fluidized Bed
FH – Fixed Hearth Kiln
RK – Rotary Kiln (often include liquid injection ports)
MRK – Mobile Rotary Kiln
LI – Liquid Injection
RR – Rotary Reactor
SR – Sulfur Recovery Furnace

TABLE K-2
COMMERCIAL HAZARDOUS WASTE REUSE AS FUEL CAPACITY FOR SLUDGES AND SOLIDS

NAME	UNIT TYPE\1	1986 UTILIZED CAPACITY (TONS/YR)	MAY 1990 MAXIMUM CAPACITY (TONS/YR)	MAY 1990 AVAILABLE CAPACITY (TONS/YR)	DEC 1990 MAXIMUM CAPACITY (TONS/YR)	DEC 1990 AVAILABLE CAPACITY (TONS/YR)	DEC 1991 MAXIMUM CAPACITY (TONS/YR)	DEC 1991 AVAILABLE CAPACITY (TONS/YR)	DEC 1992 MAXIMUM CAPACITY (TONS/YR)	DEC 1992 AVAILABLE CAPACITY (TONS/YR)
AGGREGATE FROM TSDR CAPACTIY DATA SET		0	29,885	29,885	29,885	29,885	29,885	29,885	29,885	29,885
ASH GROVE – CADENCE LOUISVILLE, NE NED007260672	CK CK	0 0	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000
ASH GROVE – CHANUTE CHANUTE, KS KSD031203318	CK CK	0 0	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000
ASH GROVE – FOREMAN CEMENT FOREMAN, AR ARD981512270	CK CK	0 0	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000	12,000 12,000
KOSMOS CEMENT COMPANY (SOUTHDOWN PORTLAND) LOUISVILLE, KY KYD024111961	CK	0	0	0	12,000	12,000	12,000	12,000	12,000	12,000
SOUTHDOWN PORTLAND CEMENT KNOXVILLE, TN	CK	0	0	0	12,000	12,000	12,000	12,000	12,000	12,000
UNITED CEMENT COMPANY ARTESIA, MS MSD077655876	CK	0	0	0	77,500	77,500	77,500	77,500	77,500	77,500
TOTAL (TONS/YEAR)		0	101,885	101,885	203,385	203,385	203,385	203,385	203,385	203,385

NOTE: CK = CEMENT KILN

K.2. GENERAL METHODOLOGY AND ASSUMPTIONS FOR COMMERCIAL INCINERATORS

EPA first contacted regional and state permitting agencies to obtain both professional estimates of each facility's sludge/solid capacity and, if applicable, the permitted sludge/solid capacity limit. EPA obtained permit limits on either (1) mass feed rates for specific waste forms (e.g., sludges and solids, containerized solids, aqueous wastes), (2) overall mass feed rates to a particular unit or the facility, or (3) heat release or heat input limits to a particular unit or facility. These limits came from draft or final permits or from the permit application, as applicable in each case. EPA used a slightly different method for estimating sludge/solid capacity in each of these three cases.

When specific trial burn mass feed rates were obtained, EPA summed and extrapolated the sludge and solid feed rates to estimate maximum sludge/solid capacity. If no other limit was specified (e.g., total feed to the facility), EPA simply projected the total sludge/solid feed rate directly to an annual estimate by multiplying the hourly feed by 7200 hours per year, the assumed number of operating hours for hazardous waste incinerators. For example, if the trial burn demonstrated 500 lb/hour of containerized solids, 1000 lb/hour of bulk solids, 2000 lb/hour sludges, and 800 lb/hr energetic liquids, the maximum annual sludge/solid capacity would be obtained as follows:

500 lb/hr containerized solids
+ 1,000 lb/hr bulk solids
+ 2,000 lb/hr sludges
x 7,200 hr/yr
/ 2,000 lb/ton
= 12,600 tons/yr sludges and solids

If an overall limit was imposed in addition to the trial burn feed rates, EPA apportioned the overall maximum capacity to individual waste forms based on the percentage of sludges and solids specified in the trial burn plan. For example if trial burns demonstrated 1500 lb/hour of aqueous and 1500 lb/hour solids, and the overall feed rate to the unit was limited to 2000 lb/hour (or the equivalent) the maximum annual sludge/solid capacity would be estimated as follows:

1,500 lb/hr containerized solids
/ (1,500 lb/hr solids + 1,500 lb/hr liquids)
x 2,000 lb/hr total feed limit
x 7,200 hr/yr
/ 2,000 lb/ton
= 3,600 tons per year solids

If specific trial burn feed rates were not available, but some general mass feed limit (e.g., total tons to unit per year); EPA relied on engineering judgement to select the portion of the permit limit that could be practically allocated to burning sludges and solids. For rotary kilns in general, EPA used 75 percent of the permit maximum to represent the maximum sludge/solid capacity. For fixed hearth kilns in general, EPA used 25 percent of the overall permit specification. While it is conceivable that any given facility could burn more that these fractions under select conditions, it is unlikely that all units could maintain a higher fraction of sludges and solids over an entire operating year. This judgement is based on the conclusion that certain volumes of liquid wastes require incineration and will be burned at these commercial facilities.

The following assumptions were used throughout analysis:

- We assumed that commercial incinerators operate 7200 hours per year (this corresponds to 365 days of planned 24 hour operation with slightly more than 15 percent down time).
- EPA used a conversion factor of 2000 lb/ton to convert feed rates expressed in pounds to tons.
- To convert between gallons and tons, EPA used a factor of 240 gallons per ton based on the density of waster.

K.3. INDIVIDUAL INCINERATION FACILITY SLUDGE/SOLID CAPACITY ANALYSES

Chemical Waste Management (Trade Waste Incineration), Sauget, IL

Four units are currently operating at this facility according to EPA regional and state contacts. Only two of these units were reported in the TSDR survey response. The third unit has come on-line in the past two years, is fully permitted, and is currently burning hazardous wastes. Trial burns have been conducted and analyzed for the fourth unit, and it is currently burning hazardous wastes under limited post-trial burn conditions pending finalization of the permit which is expected within a few weeks.

Units 1, 2, and 3 are fixed-hearth incinerators rated at 16, 25, and 30 MBtu/hr, respectively. The only capacity estimates originally available from region and state contacts were 2000 lb/hr total waste feed estimates based loosely on an assumed average waste heat value of 8000 Btu/lb and each units' maximum thermal ratings. EPA used 25 percent of these overall estimates as our maximum sludge/solid estimates based on engineering judgement for fixed-hearth units. Extrapolating the resulting 500 lb/hr method, EPA obtained a maximum annual sludge/solid estimate of 1,800 tons/yr for each of these three units.

The fourth unit at this facility is a potentially mobile rotary kiln with a vertical secondary chamber rated at 50 MBtu/hr. EPA based our estimate of this unit's sludge/solid capacity on actual trial burn feed rates. Since no overall maximum limit is imposed by the permit, EPA simply extrapolated the combined feed rate of sludges and solids to obtain an maximum annual sludge/solid capacity of 29,358 tons/yr.

Since permit limit data were not available for units 1, 2, and 3, EPA contacted the facility directly. The facility contact stated that each of these units can burn about 500 pounds of solids per hour, 24 hours per day, seven days per week; confirming our estimate for these units. The facility contact indicated that the fourth unit can burn between 2,000 and 15,000 pounds of solids per hour, depending on the heating value of the waste, but that 10,000 pounds per hour is a good estimate. Extrapolating this estimate yields an annual capacity of 36,000 tons, almost 7000 tons more than the estimate based on the trial burn data. EPA concluded that this difference was not great enough to warrant revising the estimate based on trial burn data.

Chemical Waste Management (formerly SCA), Chicago, IL

This facility incorporates a 120 MBtu/hr rotary kiln with liquid injection. According to the regional contact, the draft permit imposes separate limits on hourly liquid and sludge/solid feed rates. Because the estimate obtained by applying the standard method to the permitted sludge/solid limit vastly exceeded other indicators of the facility's capacity (i.e., the facility's size and capacities reported in the TSDR survey) EPA deemed the permit limit estimate to be unreliable. Instead of using The overall permit limits, EPA based our estimates on trial burns conducted in July 1989. EPA extrapolated the highest demonstrated hourly solids feed rate from these runs to obtain a maximum annual sludge/solid capacity of 15,084. Because of these discrepancies, EPA contacted this facility to verify our findings. The facility contact indicated that the permit limits the heat release from the rotary kiln to 30 Mbtu/hr, and most sludges and solids average between 6000 Btu/lb and 7000 Btu/lb. Extrapolating the average of this range, EPA obtained an annual sludge/solid capacity estimate of 16,714. This estimate was 11 percent greater than our estimate based on the trial burn data.

Chemical Waste Management, Port Arthur, Texas

This facility, the latest addition to the nation's commercial incineration system, incorporates a 150 Mbtu/hr rotary kiln. It is fully permitted, operational, and is currently burning wastes under slightly limiting post trial burn conditions pending analysis of trial buns completed early this year. However, a major obstacle jeopardizes uninterrupted future operation of this facility. It is depending on a no migration variance for its underground injection well where it intends to dispose of its scrubber water. EPA has proposed granting the no migration variance, and a final decision is expected within the next six months. EPA obtained a maximum capacity estimate by apportioning the maximum permitted annual feed rates to liquids, sludges, and solids based on demonstrated trial burn feed rates. Using this approach, EPA estimates this facilities maximum annual sludge/solid capacity to be 125,100 tons.

Environmental Systems Company (ENSCO), El Dorado, Arkansas

This facility incorporates one rotary kiln that burns primarily PCBs. A second rotary kiln and a recently added mobile rotary kiln burn most of the facility's sludge/solid RCRA wastes. Since it was added since 1987, the mobile rotary kiln was not reported in the TSDR Capacity Data Set. Region and state permit officials indicated that this facility's permit limits only the heat release of the incinerator units -- mass feed rates are not directly limited. The on-site state inspector at the facility estimated ranges of hourly sludge/solid feed rates to both the main unit and the mobile unit based on recent operating records. EPA extrapolated the average of these ranges to obtain a maximum sludge/solid capacity of 39,600 tons per year for the fixed rotary kiln and 14,400 tons per year for the mobile rotary kiln. These unit capacities combine to a total facility sludge/solid capacity of 54,000 tons/yr. Our estimate exceeds the maximum capacity reported in the TSDR Capacity Data Set by 26840 tons/yr or 99 percent. This difference is attributed to the addition of the mobile unit and a shift toward more sludges and solids (relative to liquids) in recent years. The on-site inspector confirmed that this shift has taken place.

LWD, Calvert City, Kentucky

Two rotary kilns -- rated at 30 and 37 Mbtu/hr -- are currently operating under interim status at this facility. The state has published its intent to deny a final permit, but the denial is being appealed by LWD and the facility is not expected to close in the foreseeable future. For unit one, one set of maximum hourly feed rate limits are specified in the draft permit as demonstrated in trial burns. No overall maximum feed rate limit is imposed. EPA extrapolated these feed rates to obtain a maximum annual sludge/solid capacity of 3,312 tons.

The draft permit specifies two different sets of operating condition limits for unit 2, each with a different maximum feed rate for sludges and solids. The amount of time spent operating under each condition is left to the discretion of the facility, and no overall mass feed rate is imposed. EPA assumed equal operating time under each set of conditions. Extrapolating these hourly rates, EPA obtained a maximum annual sludge/solid capacity of 30,438 tons. These unit capacities summed to an overall facility sludge/solid capacity of 33,750 tons/yr.

Rollins Environmental Services, Baton Rouge, Louisiana

This facility's integrated system includes a rotary kiln with an after burner and a Loddby liquids burner. The total heat release from the incinerator complex is limited in the draft permit to 95.6 MBtu/hr. The draft permit also explicitly limits hourly feed rates of wastewater, wastes fed to the afterburner, and hazardous waste fed to the entire incinerator complex. To estimate the maximum permitted sludge/solid feed rate, EPA deducted the wastewater and afterburner feed limits from the total complex limit and assumed that the remaining feed rate represented the maximum permitted sludge/solid feed rate. Since specific, demonstrated, sludge/solid feed rates were not available, EPA used 75 percent of the remaining capacity limit as our sludge/solid capacity estimate. Using this method EPA obtained a maximum sludge/solid capacity of 31,784 tons/yr. This estimate exceeds the maximum capacity reported in the TSDR Capacity Data Set by 10,384 tons/yr or 49 percent. This difference is attributed primarily to a shift toward more sludges and solids relative to liquids.

Rollins Environmental Services, Bridgeport, New Jersey

This facility incorporates a complex similar to that of Rollins' Baton Rouge facility containing a rotary kiln, afterburner, and Loddby liquids burner. This facility's final RCRA permit limits heat release from the rotary kiln and Loddby burner to 35 and 90 MBtu/hr respectively. The permit also limits hourly waste mass feed rates to the kiln, afterburner, Loddby, and the entire incinerator system. Since the overall limit is less that the sum of the individual limits, EPA apportioned the overall limit to the individual system components based on the relative size of the individual component limits. EPA used 75 percent of the resulting net rotary kiln capacity to obtain a maximum sludge/solid capacity estimate of 15,560 tons/yr.

Rollins Environmental Services, Deer Park, Texas

This facility has two independent incinerator "trains" according to it's final RCRA Permit. The first train consists of a rotary kiln (80 MBtu/hr maximum rating), rotary reactor (36 Mbtu/Hr maximum rating), Loddby liquids burner (100 MBtu/hr maximum rating), and afterburner. The second train (train II) consists of a rotary kiln (120 MBtu/hr maximum rating), rotary reactor (33.5 MBtu/hr maximum rating), and afterburner. Maximum overall hourly waste feed rates are specified in the permit for each unit of each train.

The TSDR Capacity Data Set reports only two units, the two rotary kilns, both of which are reported to include liquid injection ports (these ports are presumably the Loddby burner, although the permit only identifies one Loddby Burner). This facility's final RCRA Permit limits heat input to these two kilns to 120 and 80 MBtu/hr. It also limits waste feed rates to each unit. Taking 75 percent of these waste feed limits and extrapolating, EPA obtained maximum sludge/solid capacities of 32,400 and 35,640 tons/yr for these units. These estimates are 8,722 tons/yr (21 percent) and 7,210 tons/yr (17 percent) less than the maximum capacities reported in the TSDR Capacity Data Set. A contact from Rollins indicated that these units typically burn between 50 and 75 percent sludges and solids, but could burn 100 percent solids for some wastes. This contact suggested that the capacities reported in the survey should still be accurate, but the estimate based on the permit limit coincides more closely with permit limits and the percent sludges and solids suggested by the contact.

Rollins' comment on the proposed Third Third rule indicated that EPA omitted rotary reactor #2 from its capacity analysis; but did not mention rotary reactor #1, which was also excluded from the analysis for the proposed rule. A contact from Rollins confirmed that the second rotary reactor has not been constructed. EPA estimated the existing rotary kiln's overall sludge/solid capacity based on 75 percent of the permitted maximum, and 7200 operating hours per year (versus 75 percent and 8060 hours per year suggested by Rollins' comment on the proposed Third Third rule). This units maximum capacity was thus estimated at 32,400 tons/yr.

The combined maximum sludge/solid capacity for the three units at this facility is estimated to be 100,440 tons/yr. This estimate is 16,468 tons/yr or 20 percent higher than the maximum capacity reported in the TSDR Capacity Data Set. This difference is attributed to the addition of the rotary reactor, but is offset by slightly lower estimates for the two rotary kilns.

Ross Incineration Services, Grafton, Ohio

This facility consists of a single unit for which the final RCRA permit limits hourly liquid and sludge/solid feed rates. These limits may be raised following successful trial burn demonstrations that are currently delayed while Ross appeals certain permit conditions. Taking 75% of this permit limit, EPA estimates this facility's maximum sludge/solid capacity to be 16,200. If and when the planned trial burn is successfully conducted, this facility's sludge/solid capacity could increase by 25 percent.

Rhone-Poulenc Basic Chemicals Company (formerly Stauffer Chemical Company), Houston, Texas

This facility operates a sulfuric acid regeneration furnace that is permitted as a hazardous waste incinerator. It is reported in the TSDR Capacity Data Set as a liquids only incinerator rated at 205 MBtu/hr, but EPA has received information indicating that it can burn blended sludges[1]. According to this information, Rhone Poulenc, in cooperation with Calliet Technologies, is able to burn slurried sludges, specifically K048-K052 petroleum refining wastes that have been physically separated. Rhone-Poulenc claims that this facility and its facility in Baton Rouge, Louisiana have a combined capacity of 300,000 tons per year for burning such sludges. This facility's permit limits the mass feed rate of hazardous wastes (excluding spent sulfuric acid) to 360 lb/min. Extrapolating this limit, EPA estimates this facility's maximum capacity to be 77,760 tons/yr. Assuming that the unit would continue to burn 25 percent liquids, EPA estimates this facility's sludge capacity to be 58,320 tons/year. Because of the pretreatment required for this facility to burn sludges, EPA expects this capacity to be fully available within six months.

Rhone-Poulenc Basic Chemicals Company (formerly Stauffer Chemical Company), Baton Rouge, Louisiana

This facility operates two sulfuric acid regeneration furnaces rated at 100 MBtu/hr and 180 MBtu/hr according to the TSDR Capacity Data Set. Like Rhone-Poulenc's facility in Houston, Texas, this facility was reported in the TSDR Survey as burning liquids only but is now planning to burn pre-processed K048-K052 sludges. Both units are permitted as hazardous waste incinerators, but this facility's permit does not limit mass feed rates. Moreover, according to Louisiana state permitting officials, petroleum refining wastes are manifested as recovery or reuse materials for this facility and would not be subject to hazardous waste permit limits. To estimate this facilities capacity, EPA divided the combined thermal rating of the two units by the average heating value of K048-K052 as obtained from the National Survey of Hazardous Waste Generators (4,489 Btu/lb). Extrapolating this hourly feed rate over a year and again assuming the facility will burn 25 percent liquids over the course of the year, EPA estimates this facility's maximum sludge capacity to be 168,412 tons/year. All together, EPA estimates Rhone-Poulenc's sludge capacity at the Houston, Texas, and Baton Rouge, Louisiana to be 226,732 tons/year. This estimate is about 73,000 tons/year less than the estimate provided by Rhone-Poulenc (refer to previous paragraph). This difference is attributed to estimation error and EPA's conclusion that despite what is technically conceivable, facility's are likely to burn some liquids for practical considerations (i.e., the types of wastes their customers are likely to ask them to accept). Because of the pretreatment required for this facility to burn sludges, EPA expects this capacity to be fully available within six months.

ThermalKEM, Rock Hill, South Carolina

This fully permitted facility uses a fixed hearth incinerator. The permit does not limit mass feed rates explicitly, but does limit total heat release to 42 Mbtu/hr. ThermalKEM's comment on the proposed Third Third rule argued that EPA had underestimated this facilities sludge/solid capacity by a factor of ten (EPA obtained its estimate of 17,528 tons/yr from the TSDR Survey). EPA contacted ThermalKEM to clarify this comment. The facility contact indicated that trial burns conducted since 1987 raised the maximum heat release from 19 MBtu/hr to 42 Mbtu/hr; and that ThermalKEM has modified their process to allow higher sludge/solid feed rates. These modifications include a ram feed system for charging containerized solids, a system for transporting wastes from steel drums to fiber packs, and an oxygen enrichment system for improving combustion, and improved air pollution control equipment. The facility contact indicated that these modifications allowed the facility to burn as much as 80 to 85 percent sludges and solids, and that ThermalKEM typically burns wastes with heating values ranging from 5000 Btu/lb to 8000 Btu/lb. EPA concluded based on a technical considerations that this modified unit could burn higher percentages of sludges and solids than would be expected from a typical fixed hearth unit. Using 75 percent sludges and solids as for rotary kilns, and the average of the range of heating values provided by the facility contact; EPA estimated this facilities maximum annual sludge/solid capacity to be 18,427 tons. This estimate is 5 percent higher than the sludge/solid capacity reported the TSDR Capacity Data Set.

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[1] Klepeis , John E., and Scalliet, Robert M. (October, 1989). "Total Treatment Service for Refinery Hazardous Wastes", Presented at the October 3, 1989 Meeting of the American Petroleum Institute: Solid Waste Program - Committee on Refinery Environmental Control.

K.4. SLUDGE/SOLID REUSE AS FUEL ANALYSIS

This section discusses EPA's analysis of sludge/solid reuse as fuel capacity. Section 4.1 provides details of EPA's analysis of Ash Grove Cement's sludge/solid capacity. Section 4.2 describes EPA's revisions to the sludge/solid capacity estimates reported in the TSDR Capacity Data Set.

K.4.1 ANALYSIS OF ASH GROVE CEMENT'S SLUDGE/SOLID COMBUSTION CAPACITY

During the public comment period, EPA received a comment from Ash Grove Cement Company and Cadence Chemical Resources, Incorporated describing a recently patented process for burning containerized sludges and solids in cement kilns. The system involves a network of licensed fuel blenders who receive and package solid wastes suitable for reuse as fuel into standard six gallon containers. These containers are then transported to one of the Ash Grove facilities where they are charged to the cement kiln in mid-process (either through a hole in the rotating body of the kiln or between the stationary preheater or precalciner and the rotating section of the kiln). This process has reportedly been incorporated by six cement kilns at three Ash Grove facilities.

Before assuming that Ash Grove's recently patented technology should be included in its capacity estimates, EPA reviewed the process, and contacted EPA regional and state officials who have witnessed and/or are familiar with the Ash Grove/Cadence process. EPA found no technical reason to doubt that the process could work as claimed in Ash Grove's comment. State and regional contacts confirmed that Ash Grove had implemented the technology on at least four operating kilns at its facilities in Foreman, Arkansas; Louisville, Nebraska; and Chanute, Kansas. State officials from Arkansas and Kansas have evaluated the process and concluded that it is legitimate energy recovery. As a result of these confirmations, EPA has included the sludge/solid combustion capacity at Ash Grove's six operating modified kilns in it sludge/solid combustion capacity estimates.

The Ash Grove/Cadence comment stated that Ash Grove's three facilities currently possesses a combined sludge/solid capacity of 90,000 tons/year, but they did not indicate how this number was obtained. EPA estimated each kiln's sludge/solid capacity in the following manner:

	6	Gallons per charge
x	1	Charge per kiln rotation
x	60	Kiln rotations per hour
x	8000	Hours per year
/	240	Gallons/ton
=	12,000	Tons/year

Each charge was assumed to contain 6 gallons of sludge/solids as specified in the process patent. One charge was assumed per rotation of the kiln (as determined from the patent), and the kiln was assumed to operate 8000 hours per year (based on EPA's judgement of a normal operating year). Each kiln was assumed to rotate at 60 revolutions per hour, the limit imposed by the permit issued to the Foreman, Arkansas facility. EPA's standard conversion factor of 240 gallons/ton is based on the density of water and was used for consistency with other analyses. Using this method for each of the six kilns, EPA estimates Ash Grove's overall maximum sludge solid capacity to be 72,000 tons/year.

K.4.2 UPDATING THE RAF SLUDGE/SOLID CAPACITY

EPA contacted EPA regional and state officials to verify the activities of each RAF facility in the TSDR Capacity Data Set reported as having sludge/solid capacity in either 1988 or 1989/90. In general capacity data was unavailable, but in most cases EPA was able to determine whether the facility was accepting hazardous wastes at this time. EPA did obtain updated data for two cement companies.

United Cement, Artesia, Mississippi

This facility has been delayed by litigation regarding its state permit. It has now cleared the courts, and is fully permitted to burn hazardous waste fuels. Final feed system and truck-unloading area modifications are underway. This facility is permitted to burn up to approximately 155,000 tons of wastes that exceed 8000 Btu/hr and contain up to 30 percent solids. Based on the fraction of sludges and solids capacity reported in the TSDR Capacity Data Set (50 percent liquids, 50 percent sludge/solids), EPA estimates this facility's maximum practical sludge/solid capacity to be 77,500 tons/year. EPA expects this facility to complete modifications and begin burning wastes by the end of 1990.

Southdown Portland Cement Company

Two cement kilns owned by Southdown Portland Cement Company have incorporated the Ash Grove/Cadence mid-process solid fuel charging system (one kiln in Tennessee and one in Kentucky). Both of these facilities are reportedly operational and very close to final authorization. A third Southdown kiln is currently under construction in Ohio. Since none of these facilities is currently accepting wastes, EPA has not included them as currently available capacity. EPA expects the Louisville, Kentucky, and Knoxville, Tennessee facilities to be available by the end of 1990. Using the same method described for Ash Grove, EPA estimates the combined sludge/solid capacity of these two kilns to be 24,000 tons/year.

For the remainder of the reuse as fuel facilities, EPA obtained its estimate sludge/solid capacity estimate from the TSDR Capacity Data Set. Estimates of planned 1989/1990 capacity were used with the following omissions resulting from regional and state updates:

- Koppers Company in Mississippi no longer burns hazardous wastes.
- Environmental Waste Resources, Waterbury Connecticut, is a fuel blender but does not burn hazardous wastes.
- San Juan Cement, planned to close three of its four units by the end of 1990.
- Ideal Cement Company, Saratoga, Arkansas, has been delayed to 1991 and will burn liquids only.
- GSX, Pinewood, South Carolina, burns nonhazardous wastes only.

- Lehigh Cement Company burns liquids only at its kilns in Frederick, Maryland.

- Ohio Lime, Incorporated of Millersville, Ohio, will not burn hazardous wastes as planned due to local opposition.

- Allied Chemical in Ironton, Ohio, will not burn hazardous waste fuels in its planned industrial boiler.

K.5 SLUDGE/SOLID COMBUSTION CAPACITY THROUGH 1992

EPA recognizes the uncertainties facing new commercial incinerators, but through its discussions with regional and state officials has identified several facilities that it expects will bring new sludge/solid capacity on-line by the end of 1992. This section summarizes EPA's analysis of these planned additions.

K.5.1 PLANNED ADDITIONS TO NATIONAL SLUDGE/SOLID INCINERATION CAPACITY IN 1991

While siting problems, local opposition, and permitting hurdles make it difficult to predict the fate of planned hazardous waste incinerators, EPA has identified four incineration facilities it expects to come on-line in 1991. Their permits are either granted or imminent. Their status indicates that construction, if necessary, could proceed quickly. Capacity estimates for these facilities are based primarily on Part B permit applications. These estimates were obtained using the same methods and assumptions as for the currently operating facilities.

Environmental Systems Company, Maracopa, Arizona

According to Region IX contacts, this facility is one to six months away from receiving its permit. This facility is likely to be brought on-line quickly since it intends to incorporate three existing 33 MBtu/hr mobile rotary kilns. Using 75 percent of the facilities design capacity, EPA estimates this facility's sludge/solid incineration capacity to be 37,500 tons/year.

Aptus, Coffeeville, Kansas

According to Region VII contacts this existing 62 MBtu/hr PCB incinerator is about a year from receiving its operating permit and one and a half years from burning RCRA wastes. Using 75 percent of the sludge/solid feed rate limit specified in the permit application, EPA estimates this facilities sludge/solid incineration capacity to be 27,000 tons/year.

Aptus, Tooele, Utah

Region VIII expects this facility to receive its final RCRA permit sometime by the summer of 1990. Preliminary construction preparations for a 120 MBtu/hr rotary kiln are already underway. Based on the trial burn plan specified in Part B of the permit application, EPA estimates this facility's maximum sludge/solid incineration capacity to be 30,600 tons/year.

Alchem-Tron (GSX), Cleveland, Ohio

This currently operational modified sludge drying bed was included in the proposed rule, but EPA subsequently determined that it is not yet accepting wastes because it is awaiting a state permit. EPA expects a final permit decision from Ohio state officials this summer. Because this unit is only suitable for treating sludge and solids, EPA used 100 percent of its permitted limit to obtain a maximum annual sludge/solid capacity of 28,800 tons/year.

K.5.2 PLANNED ADDITIONS TO NATIONAL SLUDGE/SOLID INCINERATION CAPACITY IN 1992

The 1992 horizon is far less certain, though EPA included only those facilities that appear at this time to have strong prospects according to information provided by EPA regional and state officials. These facilities are included because their permit applications are being actively processed, and permits are expected by early next year.

Rollins Environmental Services, Bridgeport, New Jersey

Rollins intends to add a rotary kiln to its Bridgeport, New Jersey facility by the end of 1992. This planned unit is included in the facility's final RCRA permit. Based on the TSDR Capacity Data Set, EPA estimates this unit's maximum sludge/solid capacity to be 10,400 tons/year.

California Thermal Treatment, Vernon, California

This facility has received a permit to build a 42 MBtu/hr rotary kiln. The ultimate fate of this planned facility depends on the outcome of a permit appeal against the facility. Based on 75 percent of the maximum total facility capacity, EPA estimates this facility's maximum sludge/solid capacity to be 16,875 tons/year.

Waste-Tech, Kimball, Nebraska

This facility as received a permit from the state, and could begin construction by the end of 1990. EPA expects this fluidized bed incinerator to burn mostly liquids. Based on 25 percent of the total maximum feed rate, EPA estimates this facility's maximum sludge/solid capacity to be 4,500 tons/year.

Chemical Waste Management, Kettleman Hills, California

Chemical Waste Management is currently addressing deficiencies in this facility's permit application. This facility could receive its permit to begin construction of its 50 MBtu/hr rotary kiln by the end of 1990. Based on 75 percent of the total capacity specified in the permit application, EPA estimates this facility's sludge/solid capacity to be 27,750 tons/year.

Florida First, Polk County, Florida

According to a Region IV contact, Florida First is scheduled to receive a construction permit for this facility in early 1991. Based on the trial burn plan in Part B of the application, EPA estimates this facility's maximum sludge/solid capacity to be 27,705 tons/year.

USPCI, Tooele, Utah

USPCI is currently addressing deficiencies in this facility's permit application. This facility could receive its permit by early 1991, according to a Region VIII contact. Based on the Part B trial burn plan, EPA estimates this facility's sludge/solid capacity to be 12,595 tons/year.

K.5.3 PLANNED ADDITIONS DELAYED UNTIL 1993

Through its discussions with regional and state officials, EPA has identified several new facilities and additions to existing facilities that it expects to begin operating after the beginning of 1993. The following additions were reported in the TSDR Capacity Data Set as planned for 1989 to 1992, but are likely to be delayed until at least 1993:

- Fort Barton Holdings Incorporated, Warwick, Rhode Island
- Rollins Environmental Services, Baton Rouge, Louisiana (new unit)
- Industrial Service Corporation (formerly Radium Petroleum Company), Kansas City, Missouri
- ThermalKEM, Rock Hill, South Carolina (new unit)
- GSX Thermal Oxidation Corporation, Roebuck, South Carolina (new unit)
- Envirosafe Services of Texas, Devers, Texas
- LWD, Calvert City, Kentucky (new units)

K.6 PHONE LOGS

This section contains logs of each discussion with regional or state officials that provided information used in this analysis. These calls are grouped by EPA region, and ordered chronologically for each region. In many cases, several calls were required to obtain the necessary information. Supplemental information from state and regional contacts, including excerpts from permits, are included at the end of regional sections. Calls to facilities are presented separately at the end of this section. A list of abreviations used in the phone logs is provided at the end of Section K.6.

REGION I

3/5/90 10:10 - Stephen Yee, (617) 573-9670 - left message.

3/6/90 9:45 - called Stephen Yee

1. Fort Barton Holdings, Warwick, RI
   - not built
   - being contested
   - currently conducting state hearing
   - Frank Battaglia is state contact 573-9603
   - permit not drafted
   - company appealing
   - capacity unknown

2. Environmental Waste Resources, Waterbury, CT
   - not an incinerator or RAF
   - sludge recovery (WWT)
   - no plans to change

3. Clean Harbors, Braintree, MA
   - no application submitted
   - application expected this summer
   - call Steve Dreezen, 292-5630

4. GE, Pittsfield, MA
   - PCB's only
   - no plans to go RCRA

5. Pfizer
   - on-site pyrolizer
   - TB scheduled for April
   - no problems anticipated
   - currently IS
   - may be public opposition
   - burns plant's pumpable sludges
   - 2 RK units
   - 4700 lb/hr total (no physical form limits)

6. Polaroid, MA
   - currently on-site IS
   - will shut down: waste minimization and shipment off-site
   - call Gary Gosbee, 5740
   - closing within six months
   - burns unknown volumes - believed liquids only

7. General Dynamics
   - proposed on-site RK
   - application expected this summer
   - being redesigned
   - capacity unknown
   - 1993+

3/6/90 10:15 - Frank Battaglia (617) 675-9603 - Busy

3/6/90 10:16 - Steve Dreezen (617) 292-5832

1. Clean Harbors, Braintree, MA
   - in process of siting
   - still far from permit
   - will need RCRA, TSCA and local permits
   - town strongly opposes
   - according to application a RK (40 ft long) 60 MBTu/hr max (50 nominal)
   - new unit at existing facility
   - many problems with site
   - 1993+ if at all (doubtful)

2. GE, Pittsford
   - TSCA only
   - no planned changes

3. Polaroid, MA
   - will withdraw application
   - will close in six months
   - believed to be liquids only
   - volumes affected unknown

3/9/90 11:15 - Frank Battaglia, RI State Office

1. Fort Barton Holding, Warwick, RI
   - proposed greenfield
   - permit not issued, decision expected early summer
   - possible by end of 1992, 1993 or later more likely
   - call Mr. Terry Grey (401) 277-2797 for more details
   - capacity unknown

3/12/90 10:20 - Terry Grey, RI State Program (404) 277-2797

- will return around 1:00
- left message to call

3/12/90 11:40 - Terry Grey (RI EPA) returned call

3/12/90 12:55 - Terry Grey, RI EPA, (401) 277-2797

1. Fort Barton Holding, Warwick, RI
   - permit hearing concluded
   - decision expected in May
   - may not be permitted
   - proposed 20 MBtu/hr RK
   - max throughout 30,000 tons/yr
   - plans to accept dioxins/furans
   - no PCBs/explosives

- if at all, 1993+

3/21/90 10:35 - Stephen Yee

- left message

3/21/90 10:40 - Susan Green, CT, EPA

- no longer at EPA

Transferred to Jerry Sotolongo (617) 573-9680, Section Chief, CT RCRA

- left message

3/26/90 9:45 - George Dews, CT DOEnv. P. (203) 566-2264

- In meeting, left message

3/27/90 1:25 - Jerry Sotolonga, CT State (617) 573-9680

1. Environmental Waste Resources
   - not burning sludges and solids
   - do blend fuels
   - burning would require state permits
   - call George Dews at CT EPA (203) 566-2264

3/28/90 10:15 - George Dews, CT DOEP, returned call

1. Environmental Waste resources, Waterbury
   - does not burn hazardous waste
   - fuel blender only
   - no cement kilns burn wastes in CT, closest is NY

3/29/90 1:20 - Jerry Sotolonga, CT State (617) 573-9680

- left message

REGION II

3/5/90 10:20 - John Brogard (212) 264-8682

1. BDT - call Marwin Frank (212) 264-9578

2. Rollins, Bridgeport, NJ
   - currently only 1 RK operating
   - permit (March 1989) covers additional unit - replacement RRK
   - no dioxins/furans/PCBs
   - RRK being designed - sure thing
   - RRK will be on-line before 1992

   Capacity for existing RK

RK	7000 lb/hr	total	
Loddby	6875 lb/hr	total	no breakout by physical from
AB	4800 lb/hr	total	

3. GAF, Linden, NJ
   - very preliminary commercial incinerator
   - heavy opposition
   - passed siting commission
   - no application submitted
   - not possible by end of 1992

4. DuPont - Chambers Works, Deepwater, NJ
   - application under review
   - 50 percent commercial
   - will fax details on capacity
   - contact wants written request
   - hung up

3/5/90 1:50 - left message for John Brogard

3/6/90 10:30 - John Brogard - I left fax # and message to call

3/9/90 9:20 - John Brogard (212) 264-8682

- will send fax again since last one didn't come through
- call John Scott, NJ DEP, (609) 292-9880, regarding Rollins, Bridgeport
- call Jim Dolen (518) 457-7269 (NY RCRA) or Jack Lavber (NY Air) (518) 457-7454

1. University of Rochester, Rochester, NY
   - probably not RCRA

2. RFE, NJ
    - nonhazardous

3. American Cyanamid, Bridgewater, NJ
    - exempt recycler

4. Blue Circle, Ravenna, NY
    - never heard of, ask state

5. CWM, Model City, NY
    - call Jim Dollen

6. Lehigh Cement, Cementon
    - call Jim Dollen

7. NJ siting commission, Millstone, NJ
    - never heard of

8. Envirocare, NJ
    - dead project

9. GE, Waterford, NY
    - PCB permitted
    - call Jim Dollen

10. Schenectachy Chemicals, NY
    - call Jim Dollen

11. BASF, Kearny, NJ
    - onsite
    - liquids only
    - constructed, permitted and operating

12. Pfizer, PR
    - call Cliff Ng, 9579

13. Phillips, ECG, NY
    - call Jim Dollen

14. Union Carbide
    - denied permit
    - on-site lab wastes only
    - small unit

15. DuPont, Deepwater, NJ
    - denied permit
    - will be redone

3/9/90 11:00 - John Scott (NJ DEP)

- out till Monday
- left message

3/9/90 11:00 - Jim Dollen (NY RCRA Office) (518) 457-7269

- of all existing facilities in NY, only GE, Waterford and Kodak, Rochester burn sludges and solids
- left list of facilities and described needs
- he will call this afternoon

3/12/90 10:50 - John Scott (NJ DEP) returned call

3/12/90 10:55 - John Scott (609) 292-9880

1. Rollins, Bridgeport, NJ
   - multiple input ports
   - consists of RK
     Loddby Burner (Liquids only)
     After Burner (Wastewaters)
   - Loddby will be closed in near future
   - has received conceptual permit approval for proposed RR
   - RRK design is expected this month
   - current permit feed rate limits:
     to RK = 7000 lb/hr (could be all solids)
     to Loddby = 6,875 lb/hr (liquids only
     to AB = 4,800 lb/hr (liquids/gases)
   - estimated sludge/solid throughout is 1000 lb/hr
   - total input limit: 15,575 lb/hr
   - RKR could be up sometime in 1992

2. Call Jim Bridgewater on GAF, Linden, NJ

3. RFE burns nonhazardous wastes

4. Dupont, Deepwater, NJ
   - currently DuPont wastes only
   - has submitted application to become commercial
   - will probably modify existing RK system
   - call Anthony Fontana (same #) for more info

5. U.C., NJ
   - has closed

6. NJ Siting Commission
   - Millstone Township Site unsuitable
   - State is looking for another site
   - may back off if DuPont goes commercial
   - no operator for site has been selected
   - call Susan Boyle, Assistant Director of Commission, for more info (609) 292-1459

3/12/90 1:20 - Jim Dollen (NY RCRA Program) (518) 457-7269

- unavailable, left message

3/16/90 2:50 - John Scott, NJ DEP

1. Rollins, Bridgeport, NJ
   - max heat release from RK is 35 MBtu/hr; 90 MBtu/hr from Loddby
   - Air permit based on heat input limit
   - maximum total organic feed to RK, Loddby, and AB is 15,575 lb/hr
   - 1000 lb/hr is estimated s/s throughput limit for proposed Rotary Reactor
   - Part B allows 365 day/yr, 24 hours/day operation
   - no A, B, or C explosives or F024 permitted
   - estimated critical unit is positive displacement pump for sludges/liquids up to 3000 lb/hr
   - blending eliminates problems at low Btu/lb constituent limits

2. RFE, NJ
   - recovers precious metals by incineration

3. General Comments
   - not aware of any cement kilns burning hazardous fuels in NJ
   - contact Air office for more info on RAF exempt facilities: Joel Leon (609) 984-3027

3/21/90 10:50 - Cliff Ng, NY RCRA (212) 264-9579

- left message to call

3/22/90 9:00 - Clift Ng

1. San Juan Cement, PR
   - liquids only, primarily solvents
   - onsite and company capture wastes
   - possibly some commercial customers
   - not a TSD
   - not sure if units have closed
   - call Ton Moy @ 264-1785 (out till Monday)
   - call Carl Martinez (PR) (809) 767-8116
   - call Air Compliance Office, Kenneth Eng, 264-4711

2. Safety Kleen, RP
   - has been burning spent solvents for some time
   - thinks liquid only, not sure

3/26/90 4:50 - Ton Moy, Region II, returned call

1. San Juan Cement, PR
   - Accept blended fuels from safety kleen
   - no storage permit
   - believe liquids only
   - no idea of capacity

2. Safety Kleen, PR
   - primarily a fuel blender
   - were planning to add unit

3/27/90 1:10 Richard Ho, returned call (Region II)

1. San Juan Cement, PR
   - 3 kilns planning to close
   - not sure if already closed

4/23/90 9:45 Jim Dollen, NY RCRA (518) 457-7269

1. Chem Waste Management, Model City, NY
   - Preliminary application incomplete
   - Already a landfill
   - 2 RKs rated at 50 mbtu/hr each
   - Could possibly be permitted in one year and constructed in one year

2. Blue Circle Atlantic Cement, Ravena, NY
   - New York State requires permit for RAF
   - Has not responded to NOD
   - Not burning hazardous wastes

3. Lehigh Cement, NY
   - Demonstration permit has expired
   - Not currently burning
   - Had to report TB
   - May still be planning to burn
   - Call Sev Chetty at (518) 457-9254

4. Norlite, NY
   - May have stopped burning, failed TB
   - Has added new APCE and will try again

K-30

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION II
26 Federal Plaza
NEW YORK NY 10278
Air and Waste Management Division

EPA

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

TO
Gary Light
ICF Corp.

OFFICE/PHONE

REGION/LAB

FROM
John N. Brogard, P.E.

PHONE

MAIL CODE

OFFICE
U.S. EPA Region II/New York City

DATE
9 March 1990

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET
2

Please number all pages

INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
Panafax PX-100	FTS: 264-7613 (212) 264-7613	FTS: 264-2301 (212) 264-2301

PAGE 1 OF 2 PAGES

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DuPont/Deepwater, N.J.
Proposed Hazardous Waste Incinerator

TABLE 3.1-5
BURNER SUMMARY

Item No.	Equipment No.	Description	Location	Thermal Capacity MM Btu/hr	Liquid flow Min. lb/hr	Max. lb/hr	Higher heating value Design Btu/lb	Min. Btu/lb	Max. Btu/lb	Viscosity Min. cp	Max. cp
1.	4542-6303-01	Liquid waste spray	Kiln	--	900	3,600	2,000	0	8,000	0.8	100
2.	4542-6401-01	Pumpable sludge	Kiln	30	773	3,750	10,000	8,000	19,400	0.8	600
3.	4542-6301-01	Liquid waste	Kiln	30	773	3,750	12,500	8,000	19,400	0.8	100
4.	4542-6307-01	High freezer waste	Kiln	30	773	3,750	12,500	8,000	19,400	0.8	200
5.	4542-6302-01	Fuel oil	Kiln	50	430	2,580	19,400	NA	19,400	0.5	100
6.	4542-6305-01	Direct burn	Kiln	60	773	3,750	8,000	0	19,400	0.8	200
7.	4542-6403-01	Heavy sludge waste	Kiln	30	1,000	20,000	4,000	0	8,000	600	2500
8.	4542-6703-01	Liquid waste spray	ABC West	--	900	3,600	2,000	0	8,000	0.8	100
9.	4542-6704-01	Liquid waste spray	ABC East	--	900	3,600	2,000	0	8,000	0.8	100
10.	4542-6702-01	Low NOx burner	ABC East	30	515	3,750	12,500	8,000	19,400	0.8	200
[illegible]	4542-6701-01	Low NOx burner	ABC West	30	515	3,750	12,500	8,000	19,400	0.8	200
12.	4542-6707-01	Liquid waste	ABC North West	30	515	3,750	12,500	8,000	19,400	0.8	100
13.	4542-6705-01	Fuel oil	ABC North West	30	258	1,546	19,400	NA	19,400	0.5	100
14.	4542-6708-01	Liquid waste	ABC North East	30	515	3,750	12,500	8,000	19,400	0.8	100
15.	4542-6706-01	Fuel oil	ABC North East	30	258	1,546	19,400	NA	19,400	0.5	100
16.	4545-6716-01	Fluoride/fuel oil	ABC North	5	86	534	9,400	7,000	19,400	0.5	100

REGION III

3/5/90 1:15 - Gary Gross (215) 597-7940

1. Keystone Cement Co., Bath, PA
   - believes liquids only
   - call state offices

2. Medusa Cement, Wampum, PA
   - no information available

3. Pyrochem, Mason County, WV
   - application submitted (commercial)
   - currently dormant while plan is reevaluated
   - not before end of 1992

4. Westinghouse/Apts, Apple Grove, WV
   - no application submitted
   - probably canceled

5. Coplay Cement, Frederick, MD
   - no info - call State coordinator

6. PPG - no incinerator in PA

7. Zapata, on-site - liquids only - denied permit

8. Freeman, on-site - liquids only - denied permit

9. Union Carbide
   - U.C. wastes only
   - on-site S/S RK
   - 33 MBTu/hr
   - 2 years from permit
   - 1992+

RAF facilities in general - no data - call state offices - no changes since beginning of 1989

3/6/90 10:40 - Patrick Anderson (PA) (215) 597-7937

- replaced by Niel Swanson
- call tomorrow

3/6/90 10:50 - John Humphries (MD/WV) (215) 597-0320

- not in
- try Dennis Zielinsku or Cynthia Burrow at state office
  (215) 597-7546

3/21/90 10:55 - Patrick Anderson, PA State Coordinator

- replaced by Neil Swanson
- call Mr. Hon Lee tomorrow at (215) 597-3181
- for Region III non-PA call John Humphries, Section Chief, (215) 597-0320

Transferred to Gary Gross

- call Ed Hammberbury at MD State Office (301) 631-3356

3/21/90 11:30 - Ed Hammerburg (301) 631-3356

- left message to call

3/21/90 1:40 - Ed Hammerburg, MD DOEnv returned call

1. Lehigh Cement, Frederick, MD
   - has submitted state permit application
   - currently operating but not burning hazardous wastes
   - currently second tier priority: 8-10 months from decision
   - Jim Francis will call (301) 631-3343

2. Coplay Cement
   - never heard of

3/22/90 3:10 - Michael Martin, MD DOEnv (301) 631-3344

1. Lehigh Portland Cement, Frederick, MD
   - limited facility application submitted in 1988
   - specifies 20,000,000 gpy maximum liquids capacity
   - kilns have been operating for years
   - currently accept wastes from fuel blenders
   - thinks they've been burning hazardous waste fuels for years
   - no other cement kilns in MD burn hazardous wastes

3/26/90 1:45 - Mike Martin, MDE (301) 631-3344

1. Lehigh Cement, Frederick, MD
   - burn liquids only
   - began burning around end of 1986
   - burned 1.5 million gallons in 1988
   - burned close to 2 million gallons in 1989
   - Lehigh is the only cement kiln burning hazardous waste as fuel in MD

3/26/90 1:55 - Hon Lee, returned call

1. Medusa Cement, Wampum, PA
   - applying for storage permit
   - kilns already exist
   - no idea how much or what wastes burned

2. Keystone Cement, Bath, PA
   - burn liquid F003-F005 and some D001
   - permitted for storage
   - 2 kilns operating (possibly 3)
   - Part B says maximum capacity is 19 mgpy

4/3/90 1:30 - Liz Michaels, Lehigh Portland Cement, Allentown, PA
(215) 776-2753)

- won't provide information over phone
- requires verification of my identity

REGION IV

3/5/90 11:00 - Betty Willis (404) 347-3433 - out till Tuesday or Wednesday
Transferred to Evellyn Ponton (NC & SC)

1. Groce Labs, Greer, SC
   - no changes since beginning of 1989 (none planned)
   - no incinerator

2. GSX TOX, Roebuck (Abco, GSX)
   - 1 unit operating - no liquids only since beginning of 1989
   - 2nd unit on hold - not before 1993
   - application in - permit not drafted

3. ThermalKEM
   a)
   - permit under appeal for 1 unit which is operating under interim status
     42,000 BTU/hr
   - appealed by locals and ThermalKEM
   - no changes to operation since beginning of 1989

   b) second unit (same as existing unit)
   - planned for 1992
   - will check on capacity

   - neither burns D/F/PCBs

4. GSX Pinewood
   - will check

5. SC Incinerator, Tyrell County, SC
   - will check

6. Owens Corning, SC
   - went non-hazardous
   - was liquid

7. Westinghouse - closed - onsite unit

8. Century Furniture - onsite
   Dupont, NC - on-site

   will check on others from list (15)

   Transferred to Chip Start, (responsible for KY and TN)

9. LWD, Calvert City
   - state missed deadline
   - has issued intent to deny permit for three IS incinerators
   - 1 new unit - 100 MBTu/hr
   - will pursue more details

10. LWD, Clay, KY
    - permitting efforts inactive
    - will check - won't operate

11. CECOS, Louisville, KY
    - proposed new facility
    - state denied permit
    - won't happen

12. Pyrochem, Louisville, KY
    - won't happen

13. CWM, (SCA), Memphis, TN
    - major changes to design
    - will submit new application
    - NOD issued 3/89 - no response
    - not before end of 1992
    - RK

14. IT (DOE), Oak Ridge, TN
    - permitted and operating
    - not commercial
    - munitions only

15. Aptus/Westinghouse
    - not commercial
    - not operating
    - closed 1983

16. DuPont, KY
    - on-site
    - liquids only

17. Kentucky Solite - will check
    - cement kiln

18. M&T Chemicals
    - Ltd commercial
    - RK - 18 MBTu/hr
    - small tin recovery only

19. Olin, Calvert City, KY (same as Brandenburg)
    - Ltd commercial, liquids only
    - 131 gal/hr maximum

20. Pennwalt, Colt City, NY
    - liquids only
    - on-site

21. Rohm & Haas
    - proposed RK
    - Ltd commercial (Rohm & Haas wastes only)
    - after 1992

22. Tennessee Eastman, Kingsport, TN
    - on-site

23. Velsicol - Liquids only
    - call in morning for more info

AL/MS - Lissie Ketcham
- not available, call again

3/5/90 1:55 - GA/FL - Hugh Hazen

24. Florida First
    - proposed RK (commercial)
    - 75 MBTu/hr
    - 2nd round of NOD
    - No D/F/PCB
    - expect construction permit 1991 (1st, 4th)
    - possible by 1992

25. "State Officials" - Taylor County, GA
    - very preliminary
    - public opposition
    - after 1992 at best

26. FL Env. Reg. Commission, FL
    - has selected union county, FL
    - after 1992 at best
    - discussion only

27. Honeywell, Clearwater, FL
    - on-site liquids only

28. Mid Florida Mining, Lowell, FL
    - on-site - liquids only (RAF)
    - considering non-hazardous solids

29. Olin, Norwest, FL
    - onsite only
    - liquids only
    - call John Griffin, FL (904) 488-0300

30. Resource Recovery of America, Miami, FL
    - fuel contaminated soils only
    - not for hazardous wastes

31. Oldover, Green Cove Springs, FL
    - liquids only

3/6/90 11:25 - (404) 347-3433

- left message for Evellyn Ponton
- left message for Chip Stuart
- left message for Hugh Hazen
- Lissie Ketham not in - left message

3/6/90 1:00 - (404) 347-3433

- Evellyn Ponton not available
- Chip Stuart not available
- Lissie Ketcham not available
- Reached Hugh Hazen

1. Florida First, Polk County, FL
   Proposed greenfield, 75 MBtu/Hr RK
   Capacity from application
   Total capacity 38,640 tons/yr

Kiln	Low Btu	High Btu
Liq	3750 lb/hr (8000 Btu/lb)	1500 lb/hr (20,000 Btu/lb)
Sludge	6000 lb/hr (8000 Btu/lb)	2400 lb/hr (20,000 Btu/lb)
Bulk Solids	10,400 (0 Btu/lb)	4200 lb/hr (12,000 Btu/hr)
Contaminated Solids	6000 lb/hr (0 Btu/lb)	3000 lb/hr (12,000 Btu/hr)

Secondary chamber
    liquids to each of three nozzles
    3000 lb/hr (0 Btu/lb)
    1200 lb/hr (20,000 Btu/lb)

3/7/90 3:30 - Chip Stuart (404) 347-3433)

1. LWD, Calvert City, KY
   - Three existing units
     unit 1, 30 MBtu/hr RK
     unit 2, 37 MBtu/hr RK
     unit 3, 100 MBtu/hr RK

   - two proposed units
     unit 4, 100 MBtu/hr RK
     unit 5, 100 MBtu/hr RK

   - call KY permit writer, Beth Antley for capacity details
     (404) 347-7109

   State office contacts:
   KY - Mohammed Aladdin, (502) 564-6716
   TN - Jackie Obeerah - Baah, (615) 741-3424

2. LWD, Clay, KY
   - exists

- was municipal
- won't ever operate

3. IT, Oak Ridge, TN
   - munitions only

4. Aptus/Westinghouse, Louisville, KY
   - closed 1983

5. Kentucky Solite, Brooks, KY
   - cement kiln

6. Olin, Brandenbury, KY

   - no incinerator at Calvert City
   - company captive
   - liquids only
   - 131 gal/hr total throughout
   - may be fraction commercial

7. Rohm & Haas, Louisville, KY
   - 5 tons/hr permitted maximum (all forms)
   - company captive

8. Tennessee Eastman
   - on-site liquids and solids
   - two 100 MBtu/hr RKs
   - one 50 MBtu/hr LI

9. Velsicol, Memphis, TN
   - existing on-site (permitted)
   - liquids only
   - 20 MBtu/hr
   - second unit never operated
   - Lissie Ketham unavailable
   - transferred to Evellyn Ponton

     - still checking on GSX, TOC, Roebuck, SC
     - still checking on ThermalKEM, Rockhill, SC

4:30 - Lissie Ketham still unavailable

3/8/90 1:45 - Evellyn Ponton, unavailable, left message
- Chip Stuart

- Tennessee Eastman exists and operates
- company captive
- burns sludges, solids and liquids

Lissie Ketham - unavailable

3/8/90 Beth Antley (KY Permit Writer) (404) 347-3433

LWD, Calvert City, KY
- public notice of permit denial
- two units operating
- unit 3 is not allowed to operate

CWM, Memphis, TN
- proposed greenfield facility
- 1993+ at best

3/9/90 10:10 - Evellyn Ponton (404) 347-3433

1. GSX, Pinewood, SC
   - operating kiln
   - nonhazardous wastes only

2. DuPont, NC
   - denied permit
   - liquids only
   - on-site

3. DuPont, SC
   - currently operating
   - liquids only
   - on-site

4. GSX, TOC, Roebuck, SC
   - currently liquids only
   - RK proposed
   - permit not drafted, not active
   - 1993+ at best
   - capacity unknown

5. ThermalKEM
   - still checking capacity
   - will call or fax data

3/9/90 11:40 - Lissie Ketham (404) 347-3433

- not available, left message

3/9/90 12:15 - Beth Antley returned my call and left message to call

3/9/90 1:00 - Beth Antley (404) 347-7109

- unavailable, left message to call

3/9/90 1:20 - Beth Antley returned call

1. LWD, Calvert City, KY
   - two units operating
   - second (and third) unit has two operating conditions specified
   - amount of time operating in condition I or II is at facility's discretion, but must be reported
   - has faxed throughput limits for each condition

3/9/90 Lissie Ketham (Region IV) (404) 347-3433

1. United Cement Company
   - call Betty Willis
2. CWM, Emelle, AL
   - permit application submitted but rejected
   - application resubmitted
   - AL isn't permitting any new units
   - chances are good that Emelle won't happen
   - if at all, won't be until 1993+
3. Mississippi Thermal Treatment Corp.
   - no application submitted
   - call Jerry Banks at MS State Program for more info (601) 961-5171
4. DuPont, Axis, AL (not Mobile)
   - on-site liquids only
5. Akzo, AL
   - has been closed for some time
6. Kay-Fries, AL
   - was liquids only
   - closed sometime after, May 1988
7. Sony, AL
   - closed 8/16/88
8. USA Anniston Depot, AL
   - burned on-site munitions only
   - currently closed, may reopen
9. 3 M Chemical, AL
   - currentLy generator only
   - either closed of operating exempt boiler
   - on-site wastes
10. Allied Chemical, Birmingham, AL
    - company captive batch incinerator
    - currently operating

- on-site wastes

11. Ciba Geigy, McIntosh, AL
    - on-site corrective action wastes
    - entered system via 1985-86 permit modification

12. First Chemical
    - on-site
    - application submitted
    - construction to be completed in two years

13. M & M, Attalla, AL
    - exempt fuel blender

3/13/90 11:00 Evellyn Ponton (404) 347-3433

1. ThermalKEM, Rockhill, SC
    - liquid/sludge feed limit is 33 lb/min
    - no solids limit specified
    - multiple hearth

2. SC Incinerator
    - no info available
    - call David Wilson at SC State Office (803) 734-5200

3/13/90 11:10 David Wilson, SC State Program Office (803) 734-5200

- unavailable, transferred to Shirley Fawcett

1. ThermalKEM
    - solids capacity not specified
    - concurred with 42,000 Btu
    - concurred with 33 lb/min L/S
    - total throughout limit (L/S/S) is 2.625 tons/hr or assuming 85% operating time, 19,500 tons/yr
    - no change since 1986 other than permit application for proposed second identical unit which has been denied, is under appeal and not likely by 1993

2. GSX, TOC, Roebuck, SC
    - still liquids only
    - requested permit for proposed RK
    - state is generally opposed
    - 1993+ is best guess

3. SC Incinerator, Tyrell County
    - no Tyrell County in SC

3/21/90 10:25 - Lissie Ketham (404) 347-3433

- returns Thursday, left message
- also left messages for Chip Stuart and Evellyn Ponton

3/22/90 9:50 - Chip Stuart, Region IV, EPA, returned call

1. Kentucky Solite; Brooks, KY
   - no storage permit
   - call Mohamid Alloudin (502) 564-6716 (or Hanna Helm)

2. Kosmos Cement Co., Louisville, KY
   - has applied for storage permit
   - needs local permit

3. American Resource Recovery Corp., Memphis, TN
   - call Larry Fitchhorn, Region IV

Transferred to Larry Fitchhorn

1. American Resource Recovery Corp.

Transferred to Wayne Garfinkel

1. American Resource Recovery Corp.
   - Leo Romminowski is Project Coordinator
   - call Dale Osher (TN Permitting/Compliance) (615) 741-3424
   - facility has caused local uproar and may have changed

3/26/90 - Lissie Ketham, Region V (404) 347-3433

1. Allied Chemical, Fairfield, AL
   - Does accept wastes from off-site
   - burns wood preserving wastes K001, D004, D007, U051, and K087
   - not fully commercial
   - burns mostly on-site wastes
   - maximum capacity is 6 tons/day total

2. First Chemical
   - on-site wastes only
   - recently permitted
   - not yet constructed
   - will burn distillation bottoms and wastewaters

3. Koppers Company
   - on-site corrective action underway
   - was a wood treater
   - now closing SI
   - call Pat Anderson or Leo Romminowski

Transferred to Pat Anderson

1. Koppers
   - was burning K001 in boilers
   - was on-site only
   - fined $41,000 on 7/28/89
   - not currently burning any hazardous waste

3/2/6/90 - Mohammid Alloudin, KY State Permit Writer (502) 564-6716

- left message to call

3/27/90 1:45 - Mohammid Alloudin, KY State Permit Writer, returned call

1. Kentucky Solite
   - not restricted by waste form but believes liquids only burned
   - are permitted for storage
   - wastes pumped from blender, Environmental Conservation Systems
   - one aggregate kiln operating

4/20/90 11:50 Jerry Banks, MS State RCRA, (601) 961-5171

1. United Cement Company, Artesia, MS
   - Litigation over
   - Air permit granted
   - Currently modifying injection system
   - Constructing truck unloading area for direct feed
   - Primarily liquids
   - Permit limits:
     - <30% solids
     - <86 gallons/minute
       >8000 btu/lb
   - 50% Hazardous fuel is more practical

2. Mississippi Thermal Treatment
   - Abandoned project

4/24/90 5:20 Glenn Moy, EPA

1. ThermalKEM
   - Operating under IS
   - Permit conditions appealed by ThermalKEM
   - Facility is rated at 42 Mbtu/hr
   - No overall or sludge/solid feed rate specified
   - Limit previously given was for lower chamber only

5/20/90 9:25 Richard Everhart, Jefferson County Air Pollution Control officer, (502) 625-6000

1. Southdown Portland
   - Owns Kosmos Cement
   - Have local permits
   - Not yet burning
   - Will burn primarily clean solvents, xylene, thinners, and off-spec oil
   - Believes liquids only
   - May burn tires
   - Have draft RCRA permit
   - No capacity limit

K-45

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GA 30365

FACSIMLE TRANSMISSION SHEET

DATE: 3/9/90 NO. OF PAGES (INCLUDE COVER SHEET) 2

TO: Gary Light FAX NUMBER: 703/934-9740 (Room 455)

ADDRESS: Lexington, VA PHONE: 703/934-3928

IF THE FOLLOWING MESSAGE IS RECEIVED POORLY, PLEASE CALL Beth Antley

IN OUR OFFICE AT FTS 257-7109 OR COMMERCIAL (404) 347-7109

SPECIAL NOTES OR INSTRUCTIONS

PLEASE NUMBER ALL PAGES

****

MACHINE TYPE	FAX NUMBERS
HARRIS/3M	FTS 257-5206
Model 2225	COMM. (404) 347-5206

K-46

LWD, Inc. Calvert City, KY

Unit 1 (lb/hr)

Organic Liquids	1950
Aqueous Liquids	5000
Sludges	660
Packages (solids)	260
Solids (bulk)	–
Total Thermal Input	30×10^6 Btu/

Unit 2 (lb/hr)

	Condition I	Condition II
Organic Liquids	2160	2176
Aqueous Liquids	3300	995
Sludges	890	–
Solids (packages)	990	–
Solids (bulk)	3530	11500
Total Thermal Input	38×10^6 Btu/hr	

Unit 3 (lb/hr)

	Condition I	Condition II
Organic Liquids	2435	4025
Aqueous Liquids	2575	–
Sludges	740	1445
Solids (package)	5550	–
Solids (bulk)	3842	20,653
Total Thermal Input	100×10^6 Btu/hr	

K-47

United States Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, GA. 30365

Facsimile Transmission Sheet

te: 4/25/90 No. of Pages (Include Cover Sheet) 4

Gary Light Fax Number: 703-934-9740

ress: ICF, Inc. Phone: 703-934-3920

. the following message is received POORLY, please call Glenn May
n our office at FTS 257- 3433 or Commerical (404) 347- 3433

ecial Notes or Instructions
Please find the permit feed conditions for ThermalKEM.

ase Number All Pages

****

WASTE MANAGEMENT DIVISION

ine Type	Fax Numbers
ris/3M	FTS 257-5205
1 2225	Comm. (404) 347-5205

THE FAX, MAN, AND NOTHING BUT THE FAX.

K-48

ThermalKEM RCRA Permit
July 1988

PART V - INCINERATION
Existing Unit

V.A. CONSTRUCTION

The Permittee shall maintain the facility in accordance with the design plans and specifications contained in the approved permit application.

V.B. PERFORMANCE STANDARD

The Permittee shall maintain the incinerator so that, when operated in accordance with the operating requirements specified in this permit, it will meet the following performance standards.

V.B.1. The incinerator must achieve a destruction removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated in this permit for each waste feed. DRE shall be determined using the method specified in R.61-79.264.343(a).

V.B.2. The Permittee must control hydrogen chloride (HCl) emissions, such that the rate of emissions is no greater than the larger of either 1.8 kg/hr or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

V.B.3. The incinerator must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter when corrected for the amount of oxygen in the stack gas in accordance with the formula specified in R.61-79.264.343(c).

V.B.4. Evidence that compliance with operating conditions specified in permit conditions is insufficient to ensure compliance with the above performance standards may be "information" justifying modification, revocation or reissuance of the permit pursuant to R.61-79.270.41.

V.C. LIMITATION OF WASTES

The Permittee shall incinerate only those hazardous wastes identified in the approved permit application and in accordance with the terms of the approved permit application and this permit.

V.C.1. The Permittee shall not incinerate any hazardous waste containing an Appendix VIII organic hazardous constituent of incinerability index below 0.22 kcal/gram.

V.C.2. No waste or combination of wastes, as fed to the incinerator, shall have a heating value greater than 42,000,000 BTU/hr. This heating value should include solid waste, liquid/sludge waste, industrial gases and auxiliary fuel.

V.C.3. The ash content of the waste or combination of wastes as fed to the incinerator shall be no greater than 29.9 weight per cent.

V.C.4. The maximum halogen content of the waste or combination of wastes as fed to the incinerator shall be no greater than 27.2 weight per cent.

V.C.5. Liquid/sludge feed rate to the lower chamber measured as specified in condition V.D.15., shall be no greater than 33 lb/min.

V.C.6. Nominal flowrate of the waste industrial gases to the lower chamber, measured as specified in Condition V.D.15, shall not exceed 100 cfm, or approximately 20% of the atomization air flow.

V.C.7. The Permittee shall test each batch of liquid/sludge and solid feed, as fed to the incinerator, for the following metals: antimony, arsenic, barium, beryllium, cadium, chromium, lead, mercury, nickel, silver, thallium, and vanadium. Records shall be made available to this Department upon inspection or request. A summary of metal concentrations for each quarter must be forwarded to this Department within thirty (30) days after the end of each quarter. Within 90 days after the end of one year of testing for vanadium, the Permittee shall submit to the State Director a Risk Assessment for vanadium based on this data.

V.D. OPERATING CONDITIONS

The Permittee shall feed the wastes described in Condition V.C. to the incinerator only under the following conditions:

V.D.1. Combustion temperature of the lower chamber, measured as specified in Condition V.D.15., shall have a set point of 2100 F, and will be maintained above a minimum temperature of 1730 F. This condition must be implemented within six (6) months after the effective date of this permit.

V.D.2. Combustion temperature of the upper chamber measured as specified in Condition V.D.15., shall be maintained at 2000 degrees F or greater.

V.D.3. Combustion gas velocity indicator, measured as specified in Condition V.D.15, shall be no greater than 99 psig, as measured at the steam pressure to the scrubber ejector. The Permittee shall install a continuous recorder for the steam pressure within six (6) months after this permit is effective.

V.D.4. The duration of carbon monoxide levels below 50 ppm, measured as specified in Condition V.D.15, shall not be less than 32 minutes per 60 minutes based on a rolling 30 second sampling time. This condition must be implemented within six (6) months after the effective date of this permit.

K-50

Settlement Agreement
5/89

PART IV - METAL EMISSION LIMITS

The total combined waste feed rate to the lower chamber shall not introduce the following metals as metals or metal compounds at rates higher than the following rates.

Name of Metal	Maximum Allowable Feed rate in pounds per hour
* Antimony	2.42
* Arsenic	0.99
Barium	10.0
Beryllium	0.0044
* Cadmium	11.98
* Chromium	26.3
* Lead	22.08
Mercury	0.6
Silver	0.7
Thallium	1.3

No metals or metal compounds exceeding the final specifications under 40 CFR Part 266 shall be fed to the upper combustion chamber.

typo
"final"
should be
"fuel"

* Metal limits in effective. Other metals will be limited based on new trial burn results.

REGION V - (312) 353-2000

3/5/90 2:35 IL, Juana Rojo, 996-0990

1. CWM, Sauget, IL
   - three units currently operating - no change
   - TB for 4th unit was in 12/89
   - Air permitted granted with consent decree to upgrade all four units
   - 45 MBtu/hr RK with AB
   - tested for PCBs
   - tested for D/F
   - permit should be finalized by July/August 1990
   - planned for Superfund site wastes

   Capacity (from TB conditions as permit)

   Kiln
   High energy fuel, 700 lb/hr
   Bulk solids 10,000 lb/hr

   Secondary chamber
   Fuel 25,000 lb/hr
   44 MBtu max total

   Call state (Rob Wedsin (217) 785-2891) - returns Thursday

2. SCA, Chicago - no change since beginning of 1989

3. Oglesby Cement - no info available

4. Sun Chemical Corp., Bedford Park, IL
   - submitted application, permit drafted
   - company wastes only
   - much opposition
   - liquids and solids (all Sun plants)
   - schedule unknown, not built

Transferred - OH, Lisa Pierard (312) 353-4789

5. GSX, Cleveland, OH
   - permitted 1988
   - no changes since beginning of 1989 or planned
   - no D/F/PCB
   - four tons/hr - permitted max
   - will fax data

6. Ross, Grafton, OH
   - permit being appealed by Ross
   - no change in capacity since 1989
   - no plans

7. Waste Tech, East Liverpool, OH
   - proposed commercial
   - permitted 1984 or 1985
   - appealed by state of WVA
   - undergoing design change
   - not by 1992 (1993+)
   - 2 RK units (100 MBtu/hr each)
   - 100,000 tons/yr - biggest in country
   - foreign design
   - will fax data

8. Ohio Lime, Millersville, OH
   - RAF lime kiln
   - liquids only
   - withdrawing part B application for storage

9. Allied Chemical, Irontown, OH
   - generator only
   - no info
   - no application
   - could be RAF

10. CWM, OH (West Carrollton)
    - RAF
    - Liquids only

11. Ohio Tech, Nova, OH
    - application submitted
    - new, greenfield site
    - 13 months + for permit
    - much opposition
    - 1993+ at best
    - 30 tons/hr max (application)

12. Thermaltron, Cleveland, OH
    - not RAF or incinerator

13. Sanatize Industries, Youngstown, OH
    - commercial
    - 1993+
    - .125 tons/hr maximum

14. PPG, Circleville, OH
    - new unit replacing old
    - on-site only
    - permitted and operational
    - liquids/sludges/solids
    - 58 MBtu/hr
    - faxing capacity data

15. BP America Research, Warrensville, OH
    - on-site

16. BP Chemicals, Lima OH
    - on-site

17. Catalyst Resources, Oleria, OH
    - liquids only on-site

18. Lubrizol, Dainsville, OH
    - on-site
    - not yet permitted

19. RMI, Sodium
    - on-site D001 only - permitted

20. Lubrizol - Wickliffe, OH
    - permitted
    - on-site

Transferred to IN, Hak Cho (312) 886-0988

21. Stauffer, Hammond, IN
    - modified industrial furnace
    - reactivated as incinerator
    - possibly commercial
    - draft permit scheduled 1991
    - 1993+ on-line

22. ENSCO, Troy, IN
    - nothing submitted
    - dead project

23. Coplay Cement, Logansport, IN
    - storage permitted
    - trial burn approved
    - non-commercial
    - liquids only

24. BASF, Terre Haute, IN
    - very preliminary
    - not dead
    - 1993+ at best

25. Amoco, Lake Charles
    - on-site S/S/L
    - fluidized bed
    - permitted Nov. 1989

Transferred to MI, Lorna Jereza

26. Augusta Development, Lanawee County, MI
    - proposed
    - no application submitted
    - 1993+

27. St. Mary's Peerless Cement Co., Detroit, MI

- scheduled for 1992 (on-line)
- liquids only

28. Michigan Technology, Detroit, MI
    - no info
    - preliminary at best

29. Wayne Disposal is Augusta Development

30 Nortro/Petro Chem
    - no incinerator, tank treatment only
    - fuel blender, not burner

31. UpJohn
    - captive only
    - won't close
    - burns clean solvent and animal carcasses

32. DOW, Midland, MI
    - liquids only - IS
    - on-site
    - changing over to RK
    - operating and permitted (recently)
    - 1 "6 9s" RK for dioxins being built
    - construction to be complete 3/91
    - TB complete 9/91
    - final permit by 12/91

3/6/90 2:00 - Lisa Pierard

1. GSX, Cleveland
    - 4 tons/hr permitted maximum sludges + solids combined

2. Waste Tech, Circleville, OH
    - greenfield facility
    - redesigning equipment
    - propose 2 RKs
      each with: 100 MBtu/hr max
      ~100,000 tons/hr total

3. Allied Chemical, Ironton, OH
    - would take some time to track

4. PPG, Circleville, OH
    - 58 MBtu/hr
    - will fax data on GSX, Wastetech + PPG
    - Wen Huang not available
    - Lorna Jereza, in training, left message
    - Jauna Rojo, in training, left message

3/6/90 4:00 - Amy Dragovich from Region V called and left message

3/6/90 4:30 - Amy Dragovich (217) 782-6762 - no answer

3/6/90 5:05 - Amy Dragovich (IL State)

- CWM, Sauget was denied permit
- has appealed
- no details available

3/7/90 3:45 - Jana Rojo out till Friday

3/8/90 2:05 - Rob Watsin (IL State) (217) 785-2891

- will check on capacities for SCA, Chicago and CWM, Sauget

- Sun Chemical
  - permit application under review
  - new facility
  - company capture liquids and solids
  - schedule unknown

- call back around 3:30

3/8/90 2:15 - Lisa Pierard (312) 353-4789

- call Thelma Codina, permit writer for:
  GSX, Cleveland, OH
  Waste Tech, East Liverpool, OH
  Ross, Grafton, OH

3/8/90 2:30 - Hak Cho (312) 886-0988

- not available, left message

3/8/90 5:00 - Rob Watsin (IL State)

From Sara CAP Report:

TWI (CWM) Sauget	Liquids Capacity (tons/yr)	Solid Capacity (tons/yr)
1987	17,472	8,736
1989	17,472	8,736
1995	32,340	71,400
2009	32,340	71,400

CWM (SCA) Chicago	Liquids Capacity (tons/yr)	Solid Capacity (tons/yr)
1987	25,998 or 43,470	12,999 or 21,735
1989	25,998 or 43,470	12,999 or 21,735
1995	25,998 or 58,338	12,999 or 84,399
2009	25,998 or 58,338	12,999 or 84,399

TWI:

Unit #1	16 MBtu/yr
Unit #2	18 MBtu/hr
Unit #3	18 MBTu/hr
Unit #4	RK with unknown thermal rating

- Call Hope Wright (same #) for capacity numbers from trial burn report

- call Jim Cobb (Air Pollution Group) for status of TWI unit #4

- Mr. Watsin is not willing to look up lb/hr specifications from applications

3/8/90 5:20 - Thelma Codina (312) 886-6181

GSX, Cleveland
- sludges and solids only
- modified drying bed with vapor burner
- permitted maximum is 4 tons/hr

Ross, Grafton, OH
- does not burn dioxins

3/9/90 11:50 - Wen Huang (312) 353-2000 (886-6191)

- call Thelma Codina on Waste Tech, OH

- Ohio Tech, Nova, OH
  - sludge/solid capacity not in application
  - 62-65 MBtu/hr proposed
  - will call me back

3/9/90 3:40 - Thelma Codina (312) 886-6181

1. GSX
    - slightly limited in waste codes allowed
    - maximum permitted capacity for combined sludges and solids is 4 tons/hr (no liquids accepted)

2. Ross, Grafton, OH
    - maximum permitted limit for combined sludges and solids is 6000 lb/hr
    - upon successful TB, max sludge solid limit will be increased to 7500 lb/hr
    - maximum liquid feed rate (all ports combined) 22,190 lb/hr
    - upon successful TB, max liquid rate will be increased to 25,190 lb/hr
    - second unit planned, no application submitted

3/12/90 10:25 - Thelma Codina (Region V) (312) 886-6181

1. Waste Tech, East Liverpool, OH
    - no TB yet
    - total permitted maximum is 22,000 lb/hr
    - estimated as 50 percent solid, 36 percent liquid, 14 percent sludge
    - permit is close to expiring
    - call Bob Babik, OH EPA (614) 644-2917

3/12/90 Jauna Rojo, Region V Office (312) 886-0990

1. SCA (CWM), Chicago

    - Permitted feed limits for single existing unit:
      (design capacity)
        liquids 15,000 lb/hr
      sludges/solids 24,000 lb/hr
        no annual limit
    - just submitted new Part B for proposed 130 MBtu/hr RK
    - currently burn liquid PCB's in secondary chamber
    - permit was denied because of storage practices
    - will FAX TB feed rate data

3/13/90 1:40 - Jauna Rojo (312) 886-0990

- left message requesting CWM, Sauget capacity figures

3/15/90 8:45 - Jim Cobb, Region V State Office

1. CWM (SCA) Chicago
    - from 1983 Air Permit, (RCRA permit held up)
    - thermal rating more limited than throughout limit, consequently high Btu/lb liquids more limited
    - call Harry Chapel (217) 782-6760 on IL CAP

- total throughout estimated at 12,000 lb/hr
- storage capacity is not a problem
- call Rob Watsin in Land Division

For existing unit:

120 MBtu/hr max heat release total
  - 30 MBtu/hr - non-liquids to kiln
  - 3 MBtu/hr - contained solids changed
  - 90 MBtu/hr - after burner limit

2. CWM (TWI) Sarget, IL

Unit #1
- 14 MBtu/hr max, 2000 lb/hr
- fixed hearth with secondary chamber
- must burn some liquids to burnt ash

Unit #2
- 16 MBtu/hr, 2000 lb/hr
- very similar to Unit #1
- burns liquids in secondary chamber
- State requires and reports feed rates in an annual report

Unit #3
- Identical to #2

Unit #4
- currently accepting wastes
- 50 MBtu/hr RK with vertical secondary chamber (kiln 25 MBtu/hr, secondary chamber 30 MBtu/hr liquids)
- 35 ft long, 7 ft inside diameter
- prototype "mobile" unit
- many input ports
- from TB plan:

To kiln:	Aqueous wastes	666 lb/hr
	Fuel oil	529 lb/hr
	Sludges	657 lb/hr
	drummed solids	2,958 lb/hr
	bulk solids	4,540 lb/hr

Feed to secondary chamber:

waste fuel	1,103 lb/hr
fuel oil	455 lb/hr

- storage not a problem
- not planning to burn dixons and furans
- specified feed rates are simultaneous
- no overall throughput maximum specified on Part B application

3/19/90 12:50 - Jim Cobb, IL State Program

1. CWM (TWI), Sauget, IL
   - feed rates given for TWI units 1, 2, and 3 (2000 lb/hr) are estimates of maximum practical throughput based on general waste Btu value (8000 Btu/lb), and maximum thermal ratings

- real chemical wastes typically have Btu/lb greater than 8000
- 3rd unit is permitted and has been on-line for about 2 years
- feed rate estimates for unit 4 are based on TB which has yet to be approved

3/21/90 11:45 - Lisa Pierard, Region IV (312) 352-4789

1. Allied Chemical, Ironton, OH
   - closing tank and drum storage area
   - not sure if closing burner
   - call Mike Mochelle, OH State Inspector

2. Ohio Lime
   - not going to happen
   - company yielded to public opposition

3/21/90 12:00 - Mike Mochelle (614) 385-8501

- returns from vacation on Monday
- no one else can help

3/21/190 2:10 Hak Cho, Region V EPA (IN)

1. Coplay Cement, Logansport, IN
   - industrial furnace

2. Stauffer Chemical, Hammond, IN
   - call Date Beel or Elane Greg at IN RCRA program (317) 232-8855)
   - call Gary Victorine (886-1479), EPA Permit Writer for IN
   - for facilities in IL, call George Hamper, IL Section Chief (886-0987)

3/21/90 2:15 - Dale Beel, IN RCRA (317) 232-8855

- out today, left message
- Elaine Greg also out today

3/21/90 2:20 - Gary Victorine, IN Permit Writer (312) 886-1479

1. Stauffer Chemical, Hammond, IN
   - still operating under RAF exemption
   - sulfuric acid regeneration facility
   - in process of obtaining RCRA permit but no physical changes

3/22/90 3:25 - Shamela Sherry, Region V IN (317) 232-8852

1. Coplay Cement
   - burns solvents only
   - can burn sludges (if injectable)
   - no storage area for sludges
   - 2 kilns operating
   - no permit for kilns
   - operate 2 blending tanks
   - 2 storage tanks permitted last year
   - TB conducted in 1986
2. Lone Star Cement
   - has storage permit
   - burns liquids only
   - will look into capacities

3/26/90 9:30 Elaine Greg, IN DO Env Mgmt (317) 232-8866

1. Coplay Cement, Logansport, IN
   - obtains fuels from PatChem Fuels
   - filters fuel as unloaded and drops resulting "bags" of sludge/solids into clinker cooler
   - has storage permit
   - is not allowed to accept sludge/solids, wastes must be pumpable
   - total waste feed rate is limited to 1800 gallons/hr (2 kilns combined)
   - only sludge/solids burned are those removed from "liquid" fuels
2. Lone Star Cement, Green Castle, IN
   - Systech is fuel handler
   - burns sludge/solid filter cake (from filtering liquid fuels) in "injection cannon"
   - currently IS storage
   - can't accept sludge/solids from off-site, only burns sludge/solid removed from liquids
   - 1 kiln has capacity to burn 3000 gallons/hr
   - no state permit but "Approval Letter"
3. Stauffer Chemical
   - call Mitch Mosner, 232-3221

3/26/90 1:35 - Mich Moser, Ohio EPA, (317) 232-3221

1. Stauffer Chemical, Hammond, IN
   - plan to submit Part B for incineration
   - are currently operating as RAF
   - do burn sludges
   - capacity unknown

3/27/90 9:50 - Thelma Codinas, Region V (312) 886-6181

1. GSX, Alchem-Tron, Cleveland, OH
   - not currently operating
   - awaiting trial burn
   - awaiting state permit
   - state recently authorized
   - call Bob Babik (614) 644-2917

3/27/90 10:00 - Bob Babik, OH State RCRA

1. GSX, AlchemTron, Cleveland, OH
   - permit being reviewed by board
   - unit is constructed
   - call Ed Lim at (614) 644-2974

3/27/90 4:05 - Ed Lim, OH EPA (614) 644-2974

1. GSX, Alchem-Tron, Cleveland, OH
   - facility is constructed
   - permit expected in 1991
   - had been sludge drying pits

2. Southwest Portland, Dayton, OH
   - burns hazardous liquids as fuel
   - maybe some sludges

3. General Portland (Lafarge), Paulding, OH
   - burns hazardous fuels
   - believes liquids only

4/5/90 12:25 Juana Rojo, 312-886-0990

1. CWM, Chicago, IL
   - Permit limits: 15,000 lb/hr liquids
     24,000 lb/hr sludges & solids
   - May include PCB capacity
   - Conducted trial burn in 1989
   - Will fax data

4/5/90 4:45 Thelma Codina, returned call

1. Ross Incineration, Grafton, OH
    - Lower pretrial burn limits currently in effect (indefinitely)
    - TB was completed at higher rates
    - Ross is appealing permit conditions

4/24/90 4:00 Larry Estep, IL State RCRA permit worker (217) 782-9882

- U075 and U121 prohibited from CWM, Sauget
- SCA has been denied permit but can burn U075 and U121 under interim status during appeal

4/26/90 2:00 Lori Stevenson, OH EPA (614) 385-8501

1. Allied Chemical, Ironton, OH
    - Undergoing complete closure of last TSD unit

K-63

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION V
230 South Dearborn Street
CHICAGO IL 60604

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

TO
Gary Light

OFFICE/PHONE 703-934-3928

MACHINE NR: 703-934-9740

VERIFICATION NR:

REGION/LAB ICF

FROM
Lisa Pierard

PHONE 312-~~30~~ 353-4789

MAIL CODE 5HR-13

OFFICE WMD - OR - RPB - Ohio Section

DATE 3-6-90

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET 5

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INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
PANAFAX PX-100	FTS: 886-9096(auto) Comm: (312)886-9096	FTS: 886-3096 Comm: (312)886-3096
XEROX 400	FTS: 886-[illegible](manual) Comm: (312)886-3096	FTS: 886-3096 Comm: (312)886-3096

PAGE ___ OF ___ PAGES

To The attached
pages numbered 24 & 25

K-64

Determination - Modification of the RCRA Permit Issued to PPG Industries, - Circlevilk Inc., ID NO. OHD 004 304 689.

The U.S. EPA has determined that some of Attachment I Permit Conditions and Attachment II Waste Analysis Plan should be revised, clarified and/or added, in order to incorporate the results of the trial burn submitted by PPG Industries on May 5, 1988. the following table lists the permit conditions and waste analysis plan that have been changed and the changes and/or additions which have been made. Words or phrases that have been added or revised are underlined, and words or phrases that have been deleted are lined out.

Permit Condition	Addition
C.23.(a)	"...shall not exceed 100 ppm by dry volume basis on a 60-minute time weighed rolling average and shall be monitored..."
	Change
C.23.(b)(i)	"The total ~~feed rate, including the waste feed rate and auxiliary fuel~~ thermal load to the incinerator ~~is limited to the range of 34.8 million BTU/hr to 58.0 million BTU/hr heat input (3 operating hour average)~~ shall be greater than 3 x 10^6 BTU/hr and shall not exceed 5 x 10^6 BTU/hr on 10-minute time average.
C.23.(b).(iii)	"The feed rate of gaseous ~~materials~~, ~~including waste feed and~~ auxiliary fuel to the incinerator must be monitored....,"
C.23.(b)(iv)	"..., whichever is ~~greater~~ lesser;"
C.23.(b)(vi)	"... the rotary kiln shall ~~not~~ neither exceed ~~6,000~~ 6,600 pounds per hour ~~(24 operating hour average)~~ nor 500 pounds per charging cycle;"
C.23(b)(vii)	"...may not exceed 200 lb per hr. ~~(3 operating hour average)~~; and"
C.23.(b)(viii)	"...shall not contain any chemical ~~constituents~~ constituent listed in 40 CFR Part 261, Appendix VIII, which ~~have~~ has a heat of combustion lower than that of ~~trichloromonofluoromethane~~ carbon tetrachloride."

Addition/Change

C.23.(c) "The temperature of kiln outlet gas shall be maintained at 1850°F or greater. The temperature of the combustion gas in the secondary combustion chamber, ~~just~~ prior to the ~~secondary air~~ recirculating flue gas injection, shall be ~~maintain~~ maintained at ~~a minimum temperature of 927° C (1700) or 1204°C (2200°F), subject to the results of the trial burns~~ 1600°F or greater. ~~If the trail burn at 927°C fails to achieve the performance standards in condition e. 4, then minimum required temperture shall be 1204°C.~~ The temperature of the combustion gas in the secondary combustion chamber ~~just~~ prior to the ~~secondary air~~ recirculating flue gas injection shall be monitored...."

Change

C.23.(d) "..., shall not exceed ~~31,000~~ 27,000 standard cubic feet per minute...."

C.23.(e) "...must be greater than ~~three (3)~~ seven (7) per cent by dry volume basis ...."

C.23.(g) "...shall be no less than ~~7.0~~ 6.5."

Revision

C.23.(i) "The feed rates of lead, chrome and mercury shall not exceed 320 lb /hr, 170 lb/hr and 6lb/hr, respectively."

C.23.(j) Within six (6) months from the issuance of this Permit modification, the Permittee shall submit to the Regional Administrator a written implementation plan for control of other toxic metals (antimony, barium, silver, thallium, arsenic, cadmium and berryllium) and hydrogen chloride emission from the incinerator. The implementation plan shall include all necessary steps the Permittee will take to comply with the then-effective emission limits specified in the U.S. EPA "Draft Guidance on Toxic Metals and Hydrogen Chloride Controls for Hazardous Waste Incinerators," dated June 9, 1988, within one year from the issuance of this permit modification.

C.20 Inspections.

The incinerator and associated equipment shall be inspected in accordance with the inspection plan (permit attachment IV) and 40 CFR 264.347.

C.21. Inspection Records.

The incinerator monitoring and inspection data must be recorded and the records must be placed in the operating log in accordance with 40 CFR 264.347(d).

C.22. Incinerator Closure.

The incinerator is to be closed in accordance with 40 CFR 264.351. The incinerator closure is detailed in the closure plan (permit attachment VI).

C.23. General Operating Requirements for Incineration System.

(a) The carbon monoxide (CO) level in the flue gas leaving the electrostatic precipitator shall not exceed 100 ppm by dry volume basis and shall be monitored and recorded on a continuous basis.

(b) The waste feed operating and monitoring requirements are:

(i) The total feed rate, including the waste feed rate and auxiliary fuel to the incinerator, is limited to the range of 34.8 million Btu/hr to 58.0 million Btu/hr heat input (3 operating hour average);

(ii) The feed rate of pumpable materials, including waste feed and auxiliary fuel, to the incinerator must be monitored and recorded on a continuous basis;

(iii) The feed rate of gaseous materials, including waste feed and auxiliary fuel, to the incinerator must be monitored and recorded on a continuous basis;

(iv) The feed rate of nonpumpable materials, including waste feed and auxiliary fuel, to the incinerator must be monitored and logged on a periodic basis; not to exceed the charging cycle or fifteen (15) minutes, whichever is greater;

(v) Only gaseous and aqueous liquids materials may be injected into the secondary combustion chamber;

(vi) The solid waste feed to the rotary kiln shall not exceed 6,000 pounds per hour (24 operating hour average);

(vii) Based upon the waste analysis plan, the total chlorine content of the materials fed to the incinerator (including both the rotary kiln section and the secondary combustion chamber) may not exceed 200 lb per hr. (3 operating hour average); and

(viii) Based upon the waste analysis plan, the waste feed shall not contain any chemical constitutents listed in 40 CFR Part 261, Appendix VIII, which have a heat combustion lower than trichloromonoflouromethane.

(c) The temperature of the combustion gas in the secondary combustion chamber, just prior to the secondary air injection, shall be maintain at a minimum temperature of 927°C (1700) or 1204°C (2200°F), subject to the results of the trial burns. If the trial burn at 927°C fails to achieve the performance standards in condition C.4, then the minimum required temperature shall be 1204°C. The temperature of the combustion gas in the secondary combustion chamber just prior to the secondary air injection shall be monitored and recorded continuously.

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION V
230 South Dearborn Street
CHICAGO IL 60604

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

GARY LIGHT

FFICE/PHONE 703-934-3928 ROOM 455

MACHINE NR: 703-934-9740

VERIFICATION NR:

ION/LAB

..OM JUANA ROJO

HONE 312-886-0990

MAIL CODE 5HR-13JCK

FFICE RPB, IL Section

TE April 5, 1990

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET 9

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INFORMATION FOR SENDING FACSIMILE MESSAGES

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PAGE ___ OF ___ PAGES

Form 5040-5 (Rev. 12-83) Replaces EPA Form 5040-5A and the previous edition of EPA Form 5040-5, which are obsolete.

K-69

Fe. al Express #3401151401

CWM Chemical Services, Inc.

Chicago Incinerator
11700 S. Stony Island Ave
Chicago, IL 60617
312-646-5700

August 22, 1989

Mr. Carl Bremer
Waste Management Division, 5HR
United States Environmental
Protection Agency
230 S. Dearborn Street
Chicago, IL 60604

RE: CWM Chicago Incinerator, Trial Burn Results

Dear Mr. Bremer:

Please find attached a letter transmitting the preliminary results on the RCRA Trial Burn performed at the Chicago Incinerator by MRI. To assist the USEPA in maintaining its critical permitting schedule, we are providing this key information from the burn which indicates:

1) DRE - all runs greater than 99.99%.
2) Particulate emissions - all runs less than 0.08 gr/dscf.
3) HCl removal efficiency - all runs greater than 99%.
4) Waste feed rates and process information for all runs.
5) Heat input rates for all runs.
6) Chlorine input rates for all runs.
7) Metal feed rates and emission rates for all runs.

Note: Run 1 was disqualified.

Despite the best efforts of CWM, MRI and regulatory agencies, the final Trial Burn report is not yet available. CWM is confident, however, that with the data submitted herewith and a final report which MRI will complete and CWM will submit by September 11, 1989, the USEPA can finalize those permit conditions requiring Trial Burn data.

If any additional information is required, please contact me immediately.

Sincerely,

Douglas H. Fisher, Manager
Health, Safety & Environmental Compliance

DHF/mjr

Attachment

cc: Kurt Frey
Johan Bayer
Ed Kenney
Fred Brunner

RECEIVED
AUG 23 1989
OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

a subsidiary of Chemical Waste Management, Inc.

K-70

MIDWEST RESEARCH INSTITUT
425 Volker Bouleva
Kansas City, Missouri 641
Telephone (816) 753-760
Telefax (816) 753-84

August 21, 1989

Mr. Douglas Fisher
Chemical Waste Management, Inc.
11700 South Stony Island Avenue
Chicago, Illinois 60617

Subject: Summary of Results for the RCRA Trial Burn at the Chicago Incinerator
MRI Project No. 9374-L04

Dear Mr. Fisher:

Enclosed are five tables which summarize several of the important results from the RCRA Trial Burn conducted during the period July 6 to July 11, 1989. These tables are the following:

Table 1--Summary of Emission Performance
Table 2--Summary of Operating Data
Table 3--Waste Feed Rates and Heat Input Rates
Table 4--Waste Feed Rates and Cl Input Rates
Table 5--Metals Feed Rates and Emission Rates

The data in Table 1 show that the incinerator met the required DRE for the three POHCs in all four runs, but the low emission rate (high DRE) for TCB in Run 4 is suspect because of a low surrogate recovery efficiency in the MM5 sample from that run. The data in Table 1 also show that the incinerator met the required particulate emission limit and HCl removal efficiency in all four runs.

We at MRI regret that we could not submit the full draft final report at this time, and hope that these summary tables will help minimize any problems in this regard. Since only 5 weeks have passed since the tests were completed, this was not sufficient time to analyze all the samples, calculate and evaluate results, and prepare the draft report. However, we have been working very hard to do all the work as fast as possible, and will send the draft report to you by Friday, August 25, 1989. The draft report and data are presently undergoing QA review, so the results in the draft report may be different from those shown in the attached tables, but any changes are expected to be minor.

Sincerely,

MIDWEST RESEARCH INSTITUTE

Paul Gorman

Paul Gorman
Principal Chemical Engineer

Approved:

Chatten Cowherd

Chatten Cowherd, Director
Environmental Systems Department

cc: K. Frey--CWM
J. Bayer--CWM

TABLE 1. SUMMARY OF EMISSION PERFORMANCE

	Run 2	Run 3	Run 4	Run 5
DRE (%)				
Carbon tetrachloride	> 99.9981	> 99.9984	> 99.9986	> 99.9990
Tetrachloroethylene	> 99.9980	> 99.9978	> 99.9982	> 99.9981
1,2,3-Trichlorobenzene	99.9989	99.99986	> 99.999987[a]	99.99991
Particulate concentration (grains/dscf) corrected to 7% O_2	0.0795	0.0530	0.0405	0.0315
HCl emission (lb/h)	1.42	0.72	0.48	0.42
HCl removed efficiency (%)	99.92	99.95	99.97	99.97
Average O_2 (%)				
Plant CEM	9.7	10.4	10.8	10.5
Orsat	10.0	10.4	10.0	10.4
Average CO (ppm)				
Plant CEM	5	5	4	4
MRI CEM	1	< 1	1	< 1

---

[a] DRE for TCB in Run 4 is uncertain, due to low surrogate recovery efficiency.

TABLE 2. SUMMARY OF INCINERATOR OPERATING DATA

	Run 2	Run 3	Run 4	Run 5
Feed rates				
Organic liquid feed (lb/min)				
Kiln	27	27	28	27
SCC No. 1	36	26	27	27
SCC No. 2	34	26	27	28
	97	79	82	82
Aqueous feed to SCC (GPM)	3.0	4.1	5.9	5.9
Fuel oil to SCC (GPM)	0.48	0.56	0.48	0.51
Sludge (lb/min)	0	0	0	0
Drum solids (lb/h)	3,950	4,130	4,190	4,080
Operating parameters				
Kiln temp. (°F)	1746	1755	1725	1743
SCC temp. (°F)	2027	1869	1871	1873
Scrubber inlet temp. (°F)	178	174	176	177
Recirc. water to quench (GPM)	416	413	416	415
City water to quench (GPM)	139	173	178	173
Recirc. water to scrubber (GPM), No. 1	559	523	572	566
No. 2	569	530	567	571
Scrubber inlet pH	8.8	9.1	9.2	9.2
SCC pressure (in w.c.)	-0.50	-0.40	-0.50	-0.40
Stack velocity (acfm)	41,600	43,400	47,700	48,700
Plant continuous monitors				
O_2 (%)	9.7	10.4	10.8	10.5
CO_2 (%)	9.4	9.0	8.6	8.9
CO (ppm)	5	5	4	4
THC (ppm)	4	2	< 1	1
HCl (ppm)	15	17	4	5

Note: IWS readings, taken hourly, are included in Appendix.

REGION VI

2/28/90 5:10 - Maria Daniels, EPA Region VI

1. Chemical Waste Management, Port Arthur, TX
   - currently operating under post-trial burn conditions (90 days + 90 additional possible)
   - permitted feed rate limits based on trial burn:

	Nonenergetic Wastes (<5000 Btu/lb)	Energetic Wastes (> 5000 Btu/lb)
Liquids to kiln	--	3000 lb/hr
Liquids to Afterburner	--	8900 lb/hr
Sludges to kiln	10,000 lb/hr	5300 lb/hr
Solids to kiln	41,375 lb/hr	3000 lb/hr
Maximum mass feed to unit including fuel:		50,270 lb/hr or 150,00 tons/yr

3/5/90 4:10 - Jim Sales (214) 655-6785

1. Rollins, Deer Park, TX
   - two trains
   - faxing data

2. American Envirotech (Lullint/Houston), TX
   - application submitted
   - commercial
   - responding to NODs
   - not constructed
   - could be permitted by end of 1990
   - much opposition
   - faxing capacity data

3. Gulf Coast Waste Disposal Authority
   - withdraw application
   - won't be built

4. Ideal Cement Co., Saratoga, AR
   - no info available
   - no storage permit

5. Oglesby Cement Co., Houston, TX
   - no storage permit
   - no info available

6. Marine Shale Processors, LA
   - under enforcement
   - call Jerry Truitt, 6794

7. Houston Chemical Services (HCS)
   - fluidized bed
   - constructed
   - public hearing extended
   - much opposition
   - not permitted
   - could be permitted by 1991
   - no dioxins/furans/PCBs

8. Thermal Kinetics, Lonester, TX
   - R&D permit only

9. Boxcrow Cement
   - no info available

10. Catalyst Resources
    - existing - will shut down
    - liquids only
    - on-site

11. ENSCO, El Dorado, AR
    - two units
    - no change since beginning at 1989
    - second rotary kiln added in 1989
    - permitted and operating
    - also a fixed/transportable unit

    Max practical throughout (based on current operators - from on-site inspector)

    10.75 tons/hr (kilns 1 + 2 combined)
    + 25% (kiln 3)
    ~ 14 tons/hr

    - PCBs yes
    - D/F no
    - permit doesn't limit capacity

    overall facility practice:
    liquids 21,500 lb/hr
    solids 12,900 lb/hr

12. Rollins, Baton Rouge, LA
    - no change since beginning of 1989
    - missed deadline because of protracted LA process
    - many deny permit
    - currently under "Adjudicary Hearing"
    - if closed, appeal would allow operation for 2-3 years

13. Ash Grove Cement, Foreman, AR
    - no info available

No incinerator in the country (at least commercial) is permitted for dioxins and furans

3/6/90 2:30 - Maria Daniels (214) 655-6785

13. CWM, Port Arthur, TX
    - data already obtained
    - call TX Underground Injection Control board 655-7160

14. Envirosafe, Devers, Texas
    - faxing data

15. BASF, Freeport, TX
    - operating
    - not commercial
    - on-site
    - faxing

16. Celanese, Seabrook, TX
    - (missed deadline)
    - call Lydia Bolada (6785)
        - not in now

17. Mobay, TX
    - had on-site (small)
    - withdrew permit application
    - will resubmit

Transferred to Henry Ansgard - wanted written request

18. Stauffer Chemical, Houston, TX
    - liquids and some pumpable sludges only
    - sulfuric acid regeneration
    - commercial energy recovery

19. DuPont, LaPorte, TX
    - on-site liquid injection
    - liquids only (maybe some pumpable sludges)

20. IT, Corp., Ascension Parish, LA
    - won't be built
    - lost state permit

21. Waste Tech, Lake Charles, LA
    - only PPG wastes
    - fluidized bed
    - mostly liquids, some sludges

3/7/90 4:55 - Jim Sales unavailable, left message
Maria Daniels unavailable, left message

3/8/90 11:55 Maria Daniels (214) 655-6785

- faxing data

3/8/90 2:45 - Stan Burger (214) 655-6775, unavailable, left message

Transferred to Jim Sales

Houston Chemical
- call state Facility Manager, (512) 463-8173

3/8/90 2:55 - Sandy Harwood (TX state)
- unavailable, left message

3/8/90 3:20 - Sandy Harwood, left me a message

3/8/90 4:30 - Sandy Harwood

- call Lisa Ligas on Houston Chemical (512) 463-7999

3/9/90 12:10 - Lisa Ligas, Texas Water Commission (512) 463-7999

1. Houston Chemical Services, Bayport, TX
   - was owned by Quaker Oats
   - two giant FB incinerators for rice hulls
   - new owner proposed adding RK
   - hearing ended 2/9/90
   - permit decision expected 5/90
   - will be fully commercial
   - 1 RK - 90 MBtu/hr
   - 2 FB each 230 MBTu/hr
2. call Kyle Shelton, 8278 on Rollins, Deer Park
3. call Wayne Harry, 8534 on CWM, Port Arthur
4. call Rex McDonald, 7969 on American Envirotech
5. call Office of Notification and Classification at 463-8175 on notices of registration by cement kilns
6. never heard of Thermal Kinetics
7. call Troy Wappler, 465-2296 on Stauffer Chemical, of Houston
8. Hoesct Celanese, Pasadena, TX
   - operating
   - on-site
   - liquids only

9. Sandoz, Baumont, TX
   - on-site pesticides
   - LI
   - awaiting TB

12:30 - Kyle Shelton not in

Transferred to Rex McDonald

1. American Envirotech
   - have responded to NODs
   - could be permitted by 1st, 4th 1991
   - two RK's proposed - 130 MBtu each
   - not willing to look up throughput limits

3/9/90 12:40 - Kyle Shelton (512) 463-8278, not available

Transferred to Troy Wappler

1. Stauffer, Houston, TX
   - liquids only
   - no recent changes in capacity

2. Pennwalt, Baumont, TX
   - changed name to Atochem North America
   - on-site liquids only

3/9/90 3:10 - Kyle Shelton (TWC) returned call

1. Rollins, Deer Park, TX
   - first permitted late 1987
   - no planned changes to capacity
   - trying to amend permit for dioxins and furans

2. Occidental Chemical, Engleside, TX
   - proposed on-site facility
   - company captive
   - vinyl chloride liquid wastes only

3/12/90 1:40 - Gail Artall, LA State Permit Office (504) 342-4685

- will call back with capacity data on Rollins, Baton Rouge

3/13/90 2:15 - Gail Artall (504) 342-4685

- left message to call

3/14/90 10:30 - Gail Artall, LA State

- . transferred to Don Nugent

Rollins, Baton Rouge
- will fax capacity data from permit

3/14/90 4:20 - Dan Johanson, AR State, Permit Coordinator (215) 655-6760

- left message

Transferred to Lee Hayes

- AR Permit Section (502) 562-7444

Transferred to Stan Burger

Transferred to Mark McKorkel, Permit Writer

1. ENSCO, El Dorado, AR
   - call Cecil Harrell or Mike Bates at AR Permit Section # (502) 562-7444
   - 2 large RK's
   - 1 boiler
   - 1 transportable RK
   - 2 ABs
   - 2nd kiln permitted since 1986
   - call on-site inspector, Mohammed Abdulhared (501) 863-7173
   - more storage capacity than feed potential

Transferred to Mike Porta

1. Ash Grove Cement, Foreman, AR
   - are currently burning s/s
   - fully permitted by State (6/89)
   - 1 container/revolution (≤ 80 lb/container) maximum
   - kiln speed averages 1 RPM
   - wet process kiln
   - has heard of another Ash Grove kiln in OR or WA
   - no other kilns in AR burn s/s
2. Ideal Cement, Saratoga, AR
   - in process of obtaining permit to burn hazardous liquids
   - permit does limit waste form

3/16/90 10:05 - Mohammed Abdulhafed (501) 863-7173

- not available left message

3/16/90 10:05 - Mohammed Abdulhafid (501) 863-7173

1. ENSCO, Baton Rouge, LA
   - fully RCRA/TSCA permitted (no dioxins/furans/explosives)
   - 2 RKs with ABs (referred to as main unit with total thermal rating of 129 MBtu/hr)
   - 1 liquids only boiler
   - 1 fixed mobile RK, 42 MBtu/hr
   - Permit only limits PCBs to 3700 lb/hr
   - Second RK of main unit was added only 1 year ago and is designed specifically for sludges and solids
   - capable of burning low Btu/lb wastes
   - first RK in main unit is used primarily for PCB caps
   - ENSCO is definitely shifting toward relatively more sludges and solids
   - heat release limits feed rate more than mass feed rates
   - recently incorporated computerized continuous heat release monitoring system (replaces random hand sampling)
   - hard to predict Btu/lb for RCRA codes
   - will investigate actual throughput limits and call me back

3/16/90 3:40 - Mohammad Abdulhafid returned call

1. ENSCO
   - F024 on permit
   - capacities

     Practical estimates based on random selection of feed rate records:

     to mobile unit

     3000 to 5000 lb/hr sludges/solids

     to main unit (primarily #2 RK):

     6000 to 16,000 or 17,000 lb/hr

   - according to waste analysis wastes blended to between 6000 and 10,500 Btu/lb
   - optional feed blend is 8000 to 11,000 Btu/lb
   - #1 kiln is used for PCB's with some RCRA s/s on campaign basis
   - Storage - not a problem for s/s
     - occasionally, liquids back up
     - ENSCO is permitted for additional storage than currently exists
   - wastewaters average 0 to 15 Btu/lb
   - RCRA permit assumed average of 10,000 Btu/lb

3/19/90 Kyle Shelton, TWX (512) 463-8278

1. Rollins, Deer Park, TX
   - Doesn't know when individual units came on line, suggests calling Rusty Dunn at Rollins
   - could call Shannon Disarbo at TX Air Control Board

4/2/90 4:30 - Wayne Harry, TWC, returned call

1. Chemical Waste Management, Port Arthur, TX
   - received final RCRA permit 6/7/88
   - call Tom Roth of UI Control Group (512) 463-8240
   - trial burn completed, results expected in 1 to 2 months
   - currently operating at slightly reduced capacity
     - maximum gas flow will be 219,000 ACFM
     - under Post-TB conditions 185,000 ACFM

4/3/90 2:00 - Mike Porta, AR State RCRA (501) 562-7444

1. Ash Grove Cement, Foreman, AR
   - transferred to Mike Bates, Section Chief
   - Permit Writer is Mohsen Kourehdar (501) 562-7444, ext. 267
   - transferred to Mohsen Kourehdar
   - Blender is Rineco Chemical Industries

2. Rineco Chemical Industries
   - no dioxins/furans accepted
   - currently is recycler, submitted Part B about 2 years ago
   - Ash Grove doesn't burn wastes below 6,000 Btu/lb, but can be 5,000 Btu/lb before blending
   - liquids decanted from drums into tank
   - solids removed from drums by hand or using a hydraulic hammer
   - solids fed to shredder
   - shredded solids packaged in buckets
   - salesman take sample for Btu analysis before accepting
   - Rineco contact: John Whitney (501) 778-9089
   - K048-K052 in Part A
   - API sludge would make a good fuel
   - will look into K048-K052 Btu content and call back

4/4/90 11:00 - Tom Roth, TWC, returned call

1. Chemical Waste Management, Port Arthur, TX
   - public hearings held
   - in final stages of public comment
   - call Ronnie Crossland (EPA) (214) 655-7160

4/4/90 11:10 - Ronnie Crossland, EPA (214) 655-7160

1. Chemical Waste Management, Port Arthur, TX
   - no migration variance approval proposed 2/16/90
   - comment period closed Monday
   - now responding to many comments
   - final decision hoped for by May 8

4/20/90 4:20 George Hartman, (512) 463-8230

1. Envirosafe, Devers, Texas
    - Awaiting revised application
    - Not constructed
    - Proposed RK
    - Lots of opposition
    - 1993+

4/24/90 5:15 Mohamid Abdulhafid, AR State Inspector for ENSCO,
(501) 863-7173

1. ENSCO, El Dorado, AR
    - U075 and U121 (freons) damage refractory
    - Not prohibited by permit
    - Can blend with other wastes to mitigate problem

K-83

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION VI
1445 Ross Ave. at Fountain Place
Dallas, TX 75202-2733

EPA

FACSIMILE REQUEST AND COVER SHEET

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TO
Gary Light, Room 455

FACSIMILE NUMBER
CONFIRMATION NUMBER

OFFICE/PHONE
ICF / (703) 93$\overset{4}{5}$-9740

REGION/LAB

FROM
Jon Sales

PHONE
(214) 655-6785

MAIL CODE
6T-PT

OFFICE
E Region 6

DATE SENT

TIME SENT

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET
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EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
PANAFAX MV3000	FTS: 255-2142 COMM: (214) 655-2142	FTS: 255-2140 COMM: (214) 655-2140

PAGE 1 OF 3 PAGES

Form [illegible] (Rev. 12-83) Replaces EPA Form [illegible] and the previous edition of EPA Form [illegible] which are obsolete.

NAME: Rollins Environmental Services (TX)

TABLE III-3

Incinerator Train II
Operating Parameters

	Kiln No. 2	Rotary Reactor No. 2	Afterburner No. 2
Maximum heat input, MM BTU/hr	120	33.5	N.A.
Maximum waste feedrates, lbs/hr	12,000	12,000	8,000
Minimum combustion gas exit temperature, °F	1,500	1,200	1,800
Minimum Maximum combustion gas temperature upset limit, °F	1,500	1,200	1,800
Maximum volumetric flow rate, acfm (wet)	N.A.	N.A.	60,000
Maximum combustion zone pressure	Atmospheric	Negative relative to seal pressure	Atmospheric
rotational speed, rpm	3 (max)	6	N.A.
Minimum combustion gas O_2 concentration, wet basis	N.A.	N.A.	5.0% (1-hr rolling avg) 3.0% (instantaneous)
Maximum combustion gas CO concentration, wet basis	N.A.	N.A.	100
Maximum combustion gas CO concentration upset limit, wet basis	N.A.	N.A.	500

NAME: Rollins Environmental Services (TX)

TABLE III-2

Incinerator Train I Operating Parameters

	Kiln No. 1	Rotary Reactor No. 1	Loddby Liquids Burner	Afterburner #1
Maximum heat input, MM BTU/hr	80	36	100	N.A.
Maximum waste feedrate, lbs/hr	13,200	12,000	5,250	4,950
Minimum combustion gas exit temperature, °F	1,400	1,200	N.A.	1,600
Minimum combustion gas temperature upset limit, °F	1,400	1,200	N.A.	1,600
Maximum volumetric flow rate, acfm (wet)	N.A.	N.A.	N.A.	57,250
Maximum combustion zone pressure	Atmospheric	Negative relative to seal pressure	Atmospheric	Atmospheric
rotational speed, rpm	3 (max)	6	N.A.	N.A.
Minimum combustion gas O_2 concentration, wet basis	N.A.	N.A.	N.A.	5.0% (1-hr rolling avg) 3.0% (instantaneous)
Maximum combustion gas CO concentration, wet basis	N.A.	N.A.	N.A.	100
Maximum combustion gas CO concentration upset limit, wet basis	N.A.	N.A.	N.A.	500

K-86

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF SOLID AND HAZARDOUS WASTE
HAZARDOUS WASTE DIVISION
POST OFFICE BOX [illegible]307
BATON ROUGE, LOUISIANA 70804

TRANSMITTAL SLIP

ADDRESSEE: ICF Attn Mr. Gary Light
ADDRESS: Room 455
PHONE: (703) 934-3928 FAX (703) 934-9740

ORIGINATOR: La. Dept of Environmental Quality HW [illegible]
PHONE: (504) 342-1354
PAGES TO FOLLOW: 2 TIME SENT: 9:44
DATE SENT: 3-14-90

FOR ASSISTANCE (504) 342- ________

bs/87

DRA
SUBJECT TO REVISI

(3). However, any evidence of noncompliance with these performance standards may be grounds for revocation, modification or reissuance of this permit pursuant to LAC 33:V.323.

(5) The Permittee shall not incinerate wastes which are radioactive, F020, F021, F022, F023, F026, F027 (dioxin listed wastes), explosives (unless rendered safe for burning through dilution, etc. and approved for burning by the administrative or PCBs in concentrations greater than 50 ppm. Wastes containing PCB's in concentrations greater than 50 ppm shall not be incinerated unless a TSCA permit has been obtained for the incinerator.

(6) Any hazardous waste, or blend thereof, which can not be homogenized or destratified by agitation or recirculation must be direct burned in the incinerator complex only under the following conditions:

(a) Containerized liquids must be either directly educted into the afterburner or fed to the kiln after the addition of absorbant material if necessary because of volatilization and/or BTU content.

(b) Bulk liquids must be directly burned through the Loddby Auxiliary feed system or through the kiln sludge line.

(c) The feed rate must be adjusted such that phase change would not result in upset of the incinerator operating conditions.

(d) The waste analysis plan shall include approved test methods used, if other than those specified in SW-846, for establishing the conditions and limits for characterization as to homogenity, capability of stratifying or seperating into phases under nonflow or static conditions.

(7) The Permittee shall inspect and, if necessary, analyze each hazardous waste shipment received from off-site at the facility to determine whether it matches the identify of the waste specified on the accompanying manifest or shipping paper.

2. Existing Rotary Kiln, LODDBY, Afterburner Incinerator Complex

a) Operating Conditions

(1) All feed to this incinerator, vents and any auxiliary fuels shall be tested, measured, and recorded as required by LAC 33:V.1529 and the Waste Analysis Plan, (Attachment 1).

DRAFT
SUBJECT TO REVISION

(2) The maximum waste feed rate to the incinerator complex shall be as follows:

		POUNDS PER HOUR
(a)	Waste D- Thermalox waste water	9,498
(b)	Waste to the afterburner	462
(c)	Hazardous waste feed to be Loddby and kiln and afterburner	21,732

(3) The maximum heat release for the incinerator complex (kiln, LODDBY, and afterburner) shall be 95,600,000 BTU/HR, including any vent gases and auxillary fuel.

(4) All waste feeds shall contain a combined total of no more than 2619 lb/hr of total chlorine.

(5) All waste feed shall contain a combined total of no more than 67.5 lb/hr bromine.

(6) All waste feeds shall contain a combined total of no more than 35.7 lb/hr of flourine.

(7) All waste feeds shall contain a combined total of no more than 20 lb/hr of iodine.

(8) The atomized liquid feeds shall contain no more than 543 lb/hr of ash.

(9) The viscosity of the hazardous waste feed shall be maintained by preheat and steam/air pressure to insure proper atomization through the burner nozzles.

* (10) The Permittee shall not incinerate any listed waste (Table 1-LAC 33:V. Chapters 31 or 49) in concentrations greater than 100 ppm with a heat of combustion less than that of carbon tetrachloride (.24 Kcal/gr. or 432 BTU/lb).

(11) The incinerator shall operate at steady state within permitted combustion temperatures and air flow prior to introduction of hazardous waste. No fuel except natural gas, commercial fuel oil, or waste derived fuels specifically approved by LDEQ for the Permittee shall be used in the start-up of the incinerator.

b) Process Conditions

(1) The minimum temperature of the combustion gases exiting the afterburner shall be 1013°C (1856°F). All hazardous waste feeds shall be cut-off immediately if this temperature falls below the valve. The minimum temperature of the combustion gases exiting the rotary kiln shall be 886°C 1627°F. When burning hazardous waste or prior to the introduction of hazardous waste, all

Rollins BR L

K-89

SEPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION VI
1445 Ross Ave. at Fountain Place
Dallas, TX 75202-2733

FACSIMILE REQUEST AND COVER SHEET

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TO Gary Light

FACSIMILE NUMBER (703) 934-97

CONFIRMATION NUMBER

OFFICE/PHONE Room 455 (703) 934-3928

REGION/LAB ICF

FROM Maria Daniel

PHONE (214) 655-6785

MAIL CODE 6H-PT

OFFICE Haz Waste Management

DATE SENT

TIME SENT

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INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
PANAFAX MV3000	FTS: 255-2142 COMM: (214) 655-2142	FTS: 255-2140 COMM: (214) 655-2140

PAGE 1 OF 10 PAGES

PA Form 5040-5 (Rev. 12-83) Replaces [illegible]

K-90

3/13/90

Gary,

Envirosafe has not been permitted.

Maria Daniel

PERMIT NO. HW-50128-000 **CONTINUATION SHEET 3 of 42**

NAME: BASF Corporation

[II.A.2.]

Waste Descriptions	TWC Waste Class	Hazard Codes
j. Hexanediol (HDO) Lights	IH	I
k. Butyl Acrylate (BA) Residue	I	-
l. Ethylhexyl Acrylate (2-EHA) Residue	I	-
m. Hexanediol (HDO) Heavies	I	-

B. Facility Units and Functions Authorized:

The permittee is authorized to operate the following facility units for storage and processing subject to the limitations contained herein. No land disposal is authorized by this permit. Processing is limited to combustion of wastes for energy recovery and/or disposal. All waste management activities are to be confined to authorized facility units. References hereinafter in this permit to "TWC Permit Unit No. II.B.____." shall be to the facility units listed below:

1. Incinerator with waste heat boiler (IN701), identified in the Notice of Registration (NOR) as Facility No. 19, for processing of wastes described by Provision II.A.2.a. and II.A.2.c.-f., maximum heat release rate 100 million BTUs per hour - permit application submittal dated June 3, 1985;

2. Incinerator (Caustic Washwater Incinerator), identified in the NOR as Facility No. 20, for processing of wastes described by Provisions II.A.2.b., g., and h., maximum heat release rate 24 million BTUs per hour - permit application submittal dated June 3, 1985;

3. Tank (D7841), closed, maximum capacity 15,000 gallons, carbon steel, above-grade, identified as tank D999 in the application for storage of the waste authorized in Provision II.A.2.b., g. and h. - permit application submittal dated June 3, 1985; and

4. Incinerator with waste heat boiler (IN4702), identified in the NOR as Facility No. 4, for processing of wastes described by Provisions II.A.2.a., d. and II.A.2.i.-m., maximum heat release rate 50 million BTUs per hour - permit amendment submittal dated May 15, 1985. The processing of waste described by Provision II.A.2.d., Acrylic Acid Residue, is subject to the requirements of Provision IX.F.1. The processing of waste described by Provision II.A.2.l., 2-Ethylhexyl Acrylate Residue, is subject to the requirements of Provisions III.F.2. and 3.

C. Authorization to operate this facility is contingent upon maintenance of financial assurance pursuant to Provision IV.A.1. and financial liability requirements pursuant to Provision III.A.8. Authorization to begin operation of new facility components is contingent upon

NAME: BASF Corporation

I. Size and Location of Site

A. The industrial solid waste management facility is located on a 401-acre tract of land in Brazoria County. The site is in the drainage area of Segment 1201 of the Brazos River Basin, North Latitude 29°00'00", West Longitude 95°24'00".

B. The legal description of the site submitted in the application for Permit No. HW-50128 is hereby made a part of this permit as "Attachment A."

II. Facilities and Operations Authorized

A. Wastes Authorized:

The permittee is authorized to manage the hazardous and non-hazardous industrial solid wastes listed in the Part B permit application dated June 3, 1985 and revisions dated July 17, 1985, and November 19, 1985, hereinafter referred to as the permit application submittals, and the Part B permit amendment application submittal dated May 15, 1985 and amendment revisions dated August 7, 1985, May 17, 1988, and January 28, 1989, hereinafter referred to as the permit amendment submittals, described herein, subject to the limitations provided herein.

Wastes authorized for storage and processing are limited to those generated on-site at this facility. Hazardous wastes authorized to be managed under this permit are limited as follows:

1. The hazardous wastes must be in the Hazard Code Groups (as prescribed by U.S. Environmental Protection Agency regulations in effect upon date of permit approval) indicated below:

_x_ Ignitable (I)	____ Acute Hazardous Waste (H)
_x_ Toxic (T)	____ EP Toxic (E)
_x_ Corrosive (C)	____ Reactive (R)

2.

Waste Descriptions	TWC Waste Class	Hazard Codes
a. Acrylic Acid Water	IH	C,T
b. Caustic Washwater	IH	C
c. Off-Gas	-	-
d. Acrylic Acid Residue	I	-
e. Vacuum Vent/Off-Gas	-	-
f. Nitrogen Vent/Off-Gas	-	-
g. Caprolactam Kettle Bottoms	I	-
h. Cyclohexanone Heavies	I	-
i. Butyl Acrylate (BA) Ether	IH	I

3 of 10

[III.C.]

2. Maintenance and operation of the Caustic Washwater Incinerator as specified in Provisions III.E.1.-5. will be regarded as compliance with the performance standards of Title 40 CFR Part 264.343.a.-d.

3. The permittee shall maintain and operate IN4702 so that, when operated in accordance with Provisions IX.C.1.-10. and Provisions IX.D.1.-10., and sampled according to the requirements of Provisions IX.F.1.-4., the unit will meet the performance standards specified in Provisions IX.B.1.-4.

D. Incinerator IN701 Operating Requirements:

1. The permittee shall feed wastes described by Provisions II.A.2.a. and d. to the IN701 incinerator only under the following conditions:

   a. The temperature of the combustion gas between the furnace and the boiler entrance shall be maintained at a minimum 1605°F at all times and shall be monitored and recorded continuously. When any two of the three sensors in the combustion chamber detect minimum temperature specified above, the shut-off valve must automatically activate, thereby closing off the waste feed lines. If any two of the three sensors read more than 140°F apart, they must be immediately checked to determine which is in error.

   b. The maximum volumetric flowrate shall not exceed 208,800 actual cubic feet per minute (acfm). Volumetric flowrate shall be monitored and recorded continuously, except as specified in Provision III.D.4.

   c. Combustion gas concentration of carbon monoxide (CO) measured in the outlet of the waste heat boiler shall not exceed 100 ppm, dry basis at any time. The CO concentration shall be monitored and recorded continuously.

   d. The waste feed rates to the incinerator are independent of one another and may not exceed the following values:

Feed	Feed Rate (lbs/hr)
Acrylic Acid Water	13,590
Off-Gas	89,226
Acrylic Acid Residue	600
Vacuum Vent/Off-Gas	8,370
Nitrogen Vent/Off-Gas	900

PERMIT NO. HW-50128-000 **CONTINUATION SHEET 9 of 42**

NAME: BASF Corporation

[III.D.1.]

e. **The permittee shall control fugitive emissions by maintaining a totally sealed combustion zone. Pressure in the combustion zone may not exceed 16.1 psia for more than ten consecutive seconds. Pressure in the combustion zone must be monitored and recorded on a continuous basis.**

f. **The total feed rate, including the hazardous and non-hazardous waste feed rate, preheated air, and auxiliary fuel to the incinerator is limited to a maximum of 100 million BTU/hr heat input.**

g. **During start-up and shutdown of the furnace, those wastes described by Provision II.A.2.a. and d. must not be introduced into the furnace unless the furnace is operating within the conditions specified in Provision III.D.1.a. through III.D.1.f.**

h. **Ash content of the waste feed shall not exceed 100 ppm by weight.**

i. **The viscosity of the waste feed residue described in Provision II.A.2.d. shall not exceed 350 Standard Saybolt Units (SSU).**

2. **The permittee shall maintain and operate a waste feed cut-off system for the IN701 Incinerator. This system must automatically cut off those wastes described by Provisions II.A.2.a. and d. under any of the following conditions:**

   a. **When the operating conditions deviate from those specified in Provision III.D.1.a.-e.; or**

   b. **Upon:**

      (1) **Loss of primary combustion air;**

      (2) **Power outage;**

      (3) **Shutdown of the primary mover;**

      (4) **Loss of any atomizing medium for hazardous waste burners; or**

      (5) **Loss of flame at the burner.**

[III.D.]

11. The permittee shall keep a written operating record as described in 40 CFR Part 264.73. In addition to the specific requirements of this paragraph, the permittee shall also record:

    a. All occasions when the operating parameters specified in Provision III.D.1. are exceeded and/or the automatic waste feed cut-off is activated; and

    b. All occasions when waste feed is cut off pursuant to Provision III.D.2. or III.D.3.

    At a minimum, the permittee shall record:

    (1) The date and time of the incident; and

    (2) The reason for waste feed cut-off and, if applicable, the concentrations triggering cut-off.

12. The permittee shall perform the following:

    a. The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering; and

    b. The emergency waste feed cut-off system and associated alarms must be tested at least weekly to verify operability.

13. Only natural gas may be used as an auxiliary fuel.

E. Caustic Washwater Incinerator Operational Requirements:

1. The Caustic Washwater Incinerator described in Provision II.B.2. is exempt from all requirements of 40 Code of Federal Regulations (CFR) 264 Subpart O with the exceptions of 40 CFR 264.341 (waste analysis) and 40 CFR 264.351 (closure), pursuant to 40 CFR 264.340(c).

2. The waste stream described in Provision II.A.2.b. shall be analyzed monthly for the first year of operation of the Caustic Washwater Incinerator for the presence of acrolein, formaldehyde, and any other Appendix VIII constituent which could reasonably be expected to be present in the waste stream. Thereafter, the waste stream shall be analyzed annually. Additionally, the analysis must be repeated when BASF has reason to believe that the process or operation generating the hazardous waste has changed. Should the concentration of any Appendix VIII constituent exceed 100 ppm by weight, the Caustic Washwater Incinerator

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[IX.B.]

3. **The unit shall not emit particulate matter in excess of 0.08 grain per dry standard cubic foot when corrected for the amount of oxygen in the stack gas in accordance with the formula specified in 40 CFR Part 264.343 (c).**

4. **Compliance with the operating conditions specified in Provision IX.C.1.-10. of this permit will be regarded as compliance with the above performance standards. However, any evidence that compliance with the operating conditions or other permit conditions is insufficient to ensure compliance with the above performance standards may be "information" justifying modification, revocation, or reissuance of the permit pursuant to 40 CFR Part 270.41.**

C. **Incinerator IN4702 Area Operating Conditions:**

The permittee shall cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in this permit. The permittee shall feed hazardous wastes to the incinerator unit only under the following conditions:

1. **The incinerator is not in start-up or shut-down mode.**

2. **Incinerator operating instructions shall be posted so as to be immediately available to incinerator operators.**

3. **The temperature of the combustion gas measured in the furnace shall be maintained at a minimum of the following temperatures:**

Waste Feed	Hourly average	Instantaneous
Feeds including Acrylic acid residue	1005°C	950°C
Feeds excluding Acrylic acid residue	958°C	936°C

4. **The maximum volumetric flow rate through the system shall not exceed 38,844 actual cubic feet per minute at 529 °F and 16.5 psia as measured at the exhaust duct after the economizer and before the entrance of the stack.**

5. **The combustion gas concentration of carbon monoxide (CO) measured in the exhaust duct after the economizer and before the gas stream enters the exhaust gas stack shall not exceed 100 ppm(v), for more than 6 minutes in any 60-minute period, and shall not exceed 500 ppm(v) for any instantaneous value.**

8 of 10

[IX.D.4.]

1,6 Hexanediol Lights	400 lb/hr
1,6 Hexanediol Heavies	400 lb/hr
Butyl Acrylate Ether	125 lb/hr
Acrylic Acid Residue	935 lb/hr
Butyl Acrylate Residue	1339 lb/hr
2-Ethylhexyl Acrylate Residue	1307 lb/hr
Acid Water	11,080 lb/hr

5. The feed rate of any combination of two or more individual waste streams listed in Provision D.4. fed to the incinerator shall not exceed 10,772 pounds per hour at any time.

6. The total feed rate of Butyl Acrylate Residue and 2-Ethylhexyl Acrylate Residue when combined is no greater than 1955 lbs/hr.

7. The feed rate of 1,6 Hexanediol Lights and 1,6 Hexanediol Heavies when combined shall not exceed 400 lbs/hr.

8. The feed rate of POHC to the incinerator shall not exceed 519.1 pounds per hour.

9. The total ash content of wastes fed to the incinerator shall not exceed 44.2 pounds per hour.

10. The combined heat of combustion and heat content of all streams fed to the incinerator system shall not exceed 676 million BTU per hour for any 5 second period.

11. Auxiliary fuel shall be either sweet natural gas containing not more than 1.5 grains of hydrogen sulfide per 100 cubic feet and not more than 30 grains of total sulfur per 100 cubic feet, liquified petroleum gas, diesel oil, or No. 2 fuel oil. All diesel oil or No. 2 fuel oil shall be first run refinery grade and shall not consist of a blend containing waste oils or solvents. Use of any other auxiliary fuel will require prior approval of the Executive Director of the Texas Air Control Board. The permittee shall determine the lower heating value and total sulfur content of any auxiliary fuel used in the incinerator.

E. Other Incinerator Area Monitoring, Testing and Inspection Requirements for IN4702:

1. Combustion temperature, total waste feed rate, total stack volumetric flow (combustion gas velocity), oxygen concentration, and carbon monoxide concentration shall be monitored and recorded on a continuous basis.

10 of 10

PERMIT NO. HW-50128-000 **CONTINUATION SHEET 36 of 41**

NAME: BASF Corporation

[IX.C.10.]

g. High CO concentration in the stack gas of greater than 100 ppm (v) for more than 6 minutes in any 60-minute period, or an instantaneous reading of 500 ppm (v).

h. High fuel gas pressure after regulator greater than 30 psig.

i. Forced draft fan failure.

j. Loss of flame.

k. Loss of draft in the combustion chamber producing a reading of greater or equal to zero inches of water for 1 minute.

l. Instrument air failure.

m. Flow meter failure.

n. Power outage.

D. Limitations on Wastes Incinerated in IN4702:

1. The total organically bound chloride content of the total waste feed shall not exceed 5283 ppm(v).

2. The hazardous waste feeds to the incinerator shall not contain greater than 100 ppm of organic hazardous constituents listed in 40 CFR Part 261, Appendix VIII, having an individual heat of combustion less than 8053 BTU/lb (formaldehyde).

3. The total average heat value of the waste material and natural gas fired in the incinerator shall not be less than the following:

Waste Feed	**BTU/lb of waste material fed to incinerator**
Acid water only	**4,800 BTU/lb**
Feeds including acrylic acid residue	**37,000 BTU/lb**
Feeds excluding acrylic acid residue	**53,300 BTU/lb**

4. The feed rate of the individual waste streams to the incinerator shall not exceed the following at any time:

9 of 10

REGION VII

3/5/90 5:10 - Joe Galbraith (913) 551-7051, left message

3/6/90 4:30 - Joe Galbraith

1. Aptus, Coffeville, KS
   - application under review
   - at least 1 year from operating permit
   - at least 1 1/2 years from operating
   - was PCB
   - 62 MBtu/hr RK
   - capacity in application (TB plan)
     10,000 lb/hr sludge/solids max
   - hopes to burn dioxins and furans

2. Industrial Service, Corp., Kansas City, MO
   - big question
   - application under review
   - many deficiencies
   - much public opposition
   - could at best be operational in two years
   - RK - 40 MBtu/hr
   - primarily LI
   - no dioxins/furans
   - no more than 2000 lb/hr S/S

3. Safe-Tech, Chamois, MO
   - very doubtful
   - weak application submitted
   - state opposes
   - proposal is to convert municipal RK combuster for hazardous waste
   - at least two years away

4. Waste-Tech, Kimball, NE
   - fluidized bed
   - < 5000 lb/hr - s/solids not likely
   - have "good faith" state permit
   - plan to construct this year
   - at least 1 year from operation

5. Ash Grove Cement, Chanute, KS
   Louisville, NE
   - 12 cement kilns in region
   - not approved for hazardous waste
   - hasn't been demonstrated as "recycling"
   - contact considers use of cement in roads/bridges to be land disposal
   - must meet PArt 268 standards
   - liquids > 5000 Btu/lb OK (enforcement policy 1983)
   - solids not addressed in enforcement policy of 1983
   - some may be burning solids, will come down to enforcement decision
   - s/s must at least be > 5000 Btu/lb, but that may not be enough

- HQ has not addressed cement kiln policy, (Attended meeting in December)
- If sprayed like liquids - OK
- "cold end" entry not demonstrated
- State officials have witnessed Ash Grove's system and given tentative approval (6 lb charges to middle of kiln)
- will change with Boiler/Furnace Regulations

6. National Industrial Env. Services, KS
   - no application submitted

7. Other Cement Kilns in Region VII

   - Systech/Lafarge
   - Monach Cement
   - River Cement, Restus, MO
   - Continental Cement (claims to be able to burn 280 tons/day)
   - Dundee Cement

8. Atlas Environmental Services
   - preliminary design stage
   - RK for D003 explosives
   - * - Region will not allow open detonation
   - commercial for explosives - possibly from around country
   - capacity unknown
   - could be on-line in 1992

3/9/90 1:00 - Joe Galbraith (913) 551-7051

- left message to call
- out today

3/12/90 - Joe Galbraith (Region VII) returned call

1. Aptus, Coffeeville, KS
   - 10,000 lb/hr is permitted sludge/solid maximum
   - 5000-6000 lb/hr is more realistic

2. Safetech, Chamois, MO
   - withdrew permit application on Friday

3. Ash Grove Cement, KS
   - John Ramsey (913) 296-1610 of KS State Office is familiar

3/14/90 John Ramsey, KS State (913) 296-1610

1. Ash Grove Cement
   - met yesterday
   - connected with Cadence, Michigan City, IWD, who markets fuel to Ash Grove (12 blenders)
   - currently IS storage
   - have recently added many codes to application, arguing that derived from rule results in excessive coding of fuels
   - have submitted WAP

   On Ash Grove/Cadence Process:
   - 6 gal drums fed half way along 300 ft wet-process kiln
   - induction draft prohibits leakage from seal
   - last summer (1989) process operating at 1 of 2 kilns
   - rotation and drop rate is less than 3 or 4 RPM
   - has demonstrated fuel value (stopped dropping, had to increase primary fuel)
   - wet kilns better than dry (longer)
   - Both KS kilns are wet process
   - believes NE kiln is wet process also

   KS has 4 other cement kilns

2. Heartland Cement, Independence, KS
   - recently permitted
   - under construction
   - dry process kiln
   - will inject powderized solids

3. Lefarge, Ferdonia, KS
   - Systech operates waste system
   - currently grind and slurry solids for injection
   - Also have pyrolizor:
     - holds 12 drums
     - drums heated, vapors ducted to kiln
     - residues may be burned
     - permitted for nonhazardous solid waste, trying for hazardous waste permit

4. Monarch Cement, Bonner Springs, KS

   - wants to burn powderized K061

5. Lone Star Cement Co., Edwardsville, KS

   - not burning hazardous wastes
   - no notification of plans to burn hazardous fuels

REGION VIII

3/6/90 4:10 - Nina Churchman (303) 293-1500

1. Aptus, Tooele UT (Westinghouse)
    - permit under public notice
    - should go final in April
    - sure thing
    - construction begun
    - expected on-line 2nd 4th 1991
    - fully commercial
    - plans to burn dioxins/furans and PCBs
    - capacity: RK - 120 MBtu/hr
      51,000 tons/yr max

    from TB Plan

solids (0-9000 Btu/lb)	16,000 lb/hr
sludge (0-9000 Btu/lb)	4,000 lb/hr
liquid (12,700 Btu/lb)	10,178 lb/hr
aqueous (0-400 Btu/lb)	3,000 lb/hr

2. USPCI, Tooele, UT
    - county already burns nerve gas from military base
    - in NOD cycle phase
    - plans To burn dioxins/furans/PCBs
    - from applications (TB plan) (5 specified)

aqueous wastes	(0-6.25 MMBtu)	13,000-27,000 lb/hr
pumpable sludges	(0-2.4 MMBtu)	0-4000 lb/hr
solids	(0-2.4 MMBtu)	0-4000 lb/hr

    <75,000 TPY solids, < 55,000 TPY sludge/solids

3. CoWest/CISCO, UT
    - not sited
    - very doubtful
    - no application submitted

4. Rollins, Lynndyl, UT
    - site abandoned
    - application on hold
    - not active
    - not likely before 1993

5. Combustion Technology
    - no application submitted
    - not before end of 1992

6. Aptus, Salt Lake City, UT
    - no info, probably not real

7. BFI/CECOS, Last Chance, CO
   - just talk
   - not by 1992

8. ENSCO, Grouse Creek, UT
   -canceled project

REGION IX - (General (415) 556-6322)

3/5/90 7:05 pm - Larry Bowerman (415) 744-1471

1. Omega Chemical Corp., Whittier, CA
   - no application
   - dead project

2. ENSCO, Phoenix, AZ
   - new commercial site
   - Part B submitted
   - state expects to permit within 1 to 6 months
   - facility will consist of 3 mobile units
   - Total: (Exists - TSCA permit)
     100 MBTu/hr
     50,000 TPY Max (L+S+S)
   - could be available 1991

3. CA Thermal Treatment, Vernon, CA
   - proposed greenfield site
   - permitted 1988
   - under appeal
   - RK 42 MBTU/hr
   - 22,500 TPY Max
   - liquids only + pumpable sludges only
   - not constructed
   - 1991 at earliest

4. CWM, Kettleman Hills, CA
   - proposed greenfield RK
   - 50 MBtu/hr
   - 33,000 TPY Max (application)
   - some application deficiencies
   - could be permitted 1990
   - could be on-line 1992 at earliest

5. Disposal Control, Caselton, NV
   - no application submitted
   - very preliminary

6. Environmental Technologies, Las Vegas, NV
   - never heard of

7. Omega Recycling, Mendota, CA
   - no application
   - not sited

8. Stauffer Chemical (now Rhone-Poulenc), Martinez, CA
   - submitted application
   - some deficiencies
   - under review
   - possibly permit proposal by end of 1990
   - upgrade of sulfuric acid regeneration omit
   - 250 MBtu/hr

210,000 tons/r (rated)
- will limit to 140,000 TPY (tentative agreement)
- liquids only

9. ENSCO, Mobile/Phoenix (Marcicopa), AZ
   - same as 2.

10. AM Waste
    - never heard of

11. National Cement, Lebeck, CA
    - cement kiln
    - not currentLy RCRA
    - will burn liquids only
    - 50 MBtu/hr
    - 51,000 TPY

12. American Environmental Management, Rancho Cordova, CA
    - no application
    - no info
    - PCB only

13. Basil, NV
    - never heard of

14. Burnzall, NV
    - never heard of

15. IT - Vinehill (In Martinez)
    - closed

16. Koppleman, NV
    - never heard of
    - * - NV doesn't want a hazardous waste incinerator

17. Poly-Carb Inc., NV
    - never heard of

18. Sol Pro, Lillyblad, NV
    - dead or dormant

19. United Agro, NV
    - never heard of

20. ET Tech - · NV
    - never heard of

21. WFU Equipment, NV
    - never heard of

22. Wolfskill, CA
    - dead or dormant project
    - nothing heard in 4-5 years

23. Shell Oil, Martinez, CA
    - on-site only
    - liquids + sludges
    - 4 units:

      one RM17 (liquids) unit
        short-term 10-30 tons/month
        35-140 ton/yr

      three carbon monoxide boilers
      each:
        - liquids, some sludges (e.g., DAF float)
        - 10 gal/min maximum

24. Chevron, Richmond, CA
    - pesticide incinerator
    - on-site only
    - liquids only
    - 100 TPY

3/6/90 5:40 - Larry Bowerman, left message

3/7/90 5:45 - Larry Bowerman

- will ask Nahid Zoueshtiagh to get back to me next week when she returns regarding CWM, Kettleman Hills, CA
- (23) shell oil RM17's burn liquids only
- (9) will ask Jim Burkamp to check into ENSCO, Phoenix, AZ capacity breakout
- (3) CA Thermal Treatment
    - Russ Beckman wrote permit
    - liquids only RK

3/12/90 1:25 - Nahid Zoveshtiagh (Region IX permit writer) (415) 744-1471

- spoke to Larry Bowerman
- he will have permit writers for CWM, Kettleman Hills, and ENSCO, Phoenix, find capacities and get back to me

4/26/90 1:45 Larry Bowerman, Region IX

1. Omega Energy, Maricopa, CA
   - Is a fuel burner (CAD981577661)

2. Chem Waste Management, Kettleman Hills, CA
   - Proposed expansion to existing facility
   - RK

3. Sol Pro LillyBlad, NV
   - No application received
   - May not be dead project

REGION X

3/2/90 5:40 - Cathy Massimino (206) 442-4153

- on travel for 2 weeks
- Carrie Sikoiski, Chief, will call back

3/5/90 7:35 pm - Margaret Small (206) 442-2804

1. ENSCO, AK
   - never heard of
2. Environmental Security Corp., Grant County, WA
   - commercial
   - much opposition
   - application submitted, responding to NODs
   - will burn sludge/solids
3. Environmental Control, WA
   - no information
4. Colman Metals, OR
   - PCBs only
5. Penberthy Electromelt
   - no application submitted
   - small subpart X thermal treatment facility
   - accepts organic wastes
   - currently operating
   - capacity unknown
6. Rackelshaus (Now ECOS)
   - application submitted
   - call state office (206) 459-6316), Tom Eaton
   - will resubmit this summer
   - 2-4 years away
   - 34,000 TPY RK (from Environmental Impact Statement)
   - call Tim Norred (438-7019
7. Special Resource, WA
   - never heard of
8. Rabanco, WA
   - 34,000 TPY
   - make cement blocks
   - 1992 at earliest

3/7/90 - Tom Easton (WA State) (206) 459-6316, left message

EPA HEADQUARTERS

3/19/90 11:30 - Dwight Hlustick returned call

(working on Industrial Boiler and Furnace rules)

- proposed reg shouldn't adversely affect Ash Grove
- no insurmountable applicability problems for other kilns
- for dry process kilns
  - demonstrated for pre-calculator dry process kiln
  - possible for pre-heater dry process kilns
  - possible for dry process only kilns
- other kilns trying Ash Grove Process
  - maybe South Bend (name uncertain)
  - Southeastern Portland
- Ash Grove contact is Eric Hansen
- kilns rotate at around 2 RPMs
- kilns don't generally shut down for periodic maintenance because of startup problems
- more common for 1 long down time if market slumps
- some kilns fire directly from trucks
- requirements for storage permit is usually ≥ 10 days but vary's by state
- rule will limit stack emissions, not Btu/lb
- kilns will require permit which limits conditions based on volumes of product/fuel feed

COMBUSTION CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Dana Doerfler, CWM

Phone Number : (618) 271-2804

Title :

Location : Sauget, IL

Date : 4/4/90

Purpose of Call: Determine sludge/solid incineration capacity of CWM's Sauget, IL facility.

Report on Discussion:

- Three units can each burn about 500 lb/hr sludges and solids.
- Fourth unit, a RK, can burn about 2000 lb/hr of high Btu wastes sludges and solids and 10,000-15,000 lb/hr of low Btu wastes (like soil). Usually burn 10,000 lb/hr on average.
- Facility operates 24 hours per day, 7 days a week.

Any Followup Planned: None.

COMBUSTION CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Steve Enger, CWM

Phone Number : (312) 646-5700

Title : Technical Manager

Location : Chicago, IL

Date : 4/4/90

Purpose of Call: Determine sludge/solid capacity of CWM's Chicago, IL incinerator.

Report on Discussion:

- Btu is limiting factor, permit allows up to 30 million Btu/hr, which can all be non-liquids, fed at no more than 3 million Btu per charge.
- At 20,000 Btu/lb, max feed is 1500 lb/hr.
- Most sludges and solids average 6000-7000 Btu/lb.
- Soils can be fed at even higher rate.
- Entire capacity could be used for RCRA sludges and solids.

Any Followup Planned: None

K-112

COMBUSTION CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Rusty Dunn, Rollins Environmental Services

Phone Number : (703) 930-2420

Title : Environmental Manager

Location : Deer Park, TX

Date : 4/15/90

Purpose of Call: Clarify sludge/solid incineration capacity and grinding capacity prior to stabilization.

Report on Discussion:

- Second Rotary Reactor won't be available for 2 more years. It is not constructed.
- Rotary kilns typically burn 50 to 70% sludges and solids, operating at permit limits.
- Can burn as much as 100% sludge/solids for some low Btu wastes.
- Permit did not reduce capacity, no reason why TSDR maximum capacity estimates would have changed.
- Currently designing a new stabilization facility that will include grinding. Could be available in 6 months.

Any Followup Planned: None.

COMBUSTION CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Bill Ziegler, American Nukem (ThermalKEM)

Phone Number : (803) 329-9690

Title :

Location : Rock Hill, SC

Date : 4/23/90

Purpose of Call: Clarify comment on EPA underestimating ThermalKEM's capacity by a factor of 10.

Report on Discussion:

- TSDR was submitted prior to trial burn which raised maximum heat release from 19 to 42 mbtu/hr.
- Facility can burn 80-85% solids in its modified fixed hearth unit.
- No mass feed rate limits in permit, only thermal rating.
- Normally burn sludge/solid/liquid blends ranging from 5000 to 8000 Btu/lb.
- Operate 24 hours, 365 days, at 85%.
- Have modified kiln to increase solids capacity:
    - Added oxygen enrichment system.
    - Added ram feed system.
    - Now transfer wastes from steel drums to fiber packs.
    - Have added new APC equipment.
- Changes allowed increase in permitted ash content.

Any Followup Planned: None.

K-114

FUEL BLENDING CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Norman Foster, Petro-Chem Processing

Phone Number : (313) 824-5832

Title :

Location : Detroit, Michigan

Date : 4/3/90

Purpose of Call: Obtain description of fuel blending practices.

Report on Discussion:

1. 80% of sludges handled in container process system (CPS)
   - Drums drained in N_2 environment
   - Sludge/solid residue "liquified" through sheading and blending
   - Good for paint residues but not polymer residues, cartridges, or wrags
   - Wastes generally meet 5000 btu/lb if organic and contain less than 30-40% water
   - no dewatering performed

2. Other 20% sludge/solids handled in Cadence system
   - solids removed from drum, shreaded, blended, and placed in 6-gallon drums with typically more then 8000 btu/lb

3. Any problems with K048-52?
   - Permit doesn't currently allow K048-52
   - API sludge might be less than 5000 btu/lb, but Phase II regs would eliminate this problem
   - API sludge could be dewatered using a centrifuge to meet btu requirements

4. Other kilns are "blowing" solids into kilns like coal dust mixtures.

5. Capacity?
   - More equipment being added later this year
   - No current capacity problems
   - Kilns can take about 60 lb/minute
   - CPS can handle 40 drums/hr
   - liquids/solid system about 30 drums/hr
   - Capacity by end of year should reach 100 drums/hr

6. Polymers are example of high btu solid that can be suspended in liquid form. Can suspend up to 50% solids if particle size is small enough.
    - 1 gallon of liquid equal about 7 1/2 lbs + 50% solids
    - Resulting blend can be aspirated to kiln
    - Very fine particles result in fuel with consistency of milk shake
    - Must have mixing at kiln and there may be settling problems during transport.

Any Followup Planned:

LIST OF ABBREVIATIONS USED IN PHONE LOGS

AB : After Burner
APCE : Air Pollution Control Equipment
D/F : Dioxins/Furans
DO : Department of
IS : Interim Status
LI : Liquid Injection (unit)
MGPY : Million Gallons per Year
NOD : Notice of Deficiency (in permit application)
RAF : Reuse as Fuel (Facility)
RK : Rotary Kiln
RPM : Rounds per Minute
RRK : Rotary Reactor Kiln
S/S/L : Sludges/Solids/Liquids
TB : Trial Burn
TPY : Tons per Year
UIW : Underground Injection Well
WWT : Wastewater Treatment

APPENDIX L

MISCELLANEOUS PHONE LOGS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

APR 25 1990

MEMORANDUM

SUBJECT: Status of Facilities Treating Energetic Chemical Wastes

FROM: Benigna Carroll, Environmental Scientist Benigna Carroll
Land Disposal Branch
Waste Management Division

TO: The Administrative Record

On March 29, 1990, I spoke with Chester Oszman, Environmental Engineer, U.S. EPA, OSWER, Alternative Technology and Support Section, Permits and State Program Division. He said currently there are more than 175 facilities seeking permits (subpart X applications under RCRA) of which he estimates 150 facilities are seeking to treat energetic chemical wastes. Many of these interim status facilities currently are treating these wastes by open burning/open detonation (OB/OD).

Mr. Oszman said final permit decisions are due by November 8, 1992 (Sec. 3005c RCRA).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 30 1990

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Telephone Conversation with Charles A. Marvin, Vice President, The Refractories Institute, Pittsburgh, PA (412-281-6787)

FROM: Benigna Carroll, Environmental Scientist Benigna Carroll
Land Disposal Branch
Waste Management Division

TO: The Administrative Record

On Tuesday, April 24, 1990, I spoke with Mr. Marvin on the characteristics and amounts of used hazardous waste chrome refinery bricks.

Mr. Marvin said he had no direct information on the amounts of chrome refractory wastes. However, from his experience as a ceramic engineer and from general discussions with members of the Institute he estimated approximately 12,500 tons annually of used chrome refractory bricks (and shapes) are hazardous (by EPA's TCLP test) and are currently land disposed. He said this was based o the following:

-- 130,000 tons of new chrome bricks (and shapes) are manufactured each year.

-- 90 - 95% of the new bricks (and shapes) go into old furnaces. Thus, 117 - 123.5 tons of used bricks are generated each year.

-- Chrome brick varies in chrome (chromite with some chromic oxide) from 5 to 50% by weight. Thus, some used brick would not be hazardous by the EPA test. Some chrome brick is also recycled.

-- The Glass Packaging Institute, which represents a fraction of chrome brick users, estimates that 2,500 tons of hazardous chrome refractory brick is annually disposed of in landfills. Given this estimate, Mr. Marvin considered the chrome brick user groups/industries as follows and thereby arrived at his estimate for the total amount of hazardous chrome refractory brick needing alternative treatment capacity:

Group/Industry	Tons*	Comments
GPI	2,500	Packaging glass companies
Other Glass & Fiber glass	5,000	Architectural glass and fiberglass not part of GPI. These facilities could generate 2 to 3 times the amount of wastes GPI member facilities generate.
Steel Industry	5,000	Largest user of refractories. Most not hazardous by EPA toxics test.
Cement Industry (kilns)	0	Industry grinds up used refractories and incorporates them into the cement.
	======	
TOTAL ESTIMATE	12,500	Amount needing alternative treatment capacity.

---

*Amount of chrome refractory brick (shape) which is hazardous and landfilled.

Mr. Marvin added that from his discussions, waste treatment companies required bricks (and shapes) to be ground to a 1/2 inch fineness before they would accept the waste. He said most generators who currently land dispose these bricks (and shapes) do not have grinding capabilities.

BERYLLIUM WASTE CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Scott Reed

Name of Contact: Mr. Richard Davis, Brush Wellman, Inc.

Phone Number: (216) 443-1000

Title: Manager, Environmental Affairs

Location: Cleveland, Ohio

Date: 4/26/90

Purpose of Call: P015 (Beryllium) Recovery.

Report on Discussion:

Mr. Davis discussed generation of P015 Beryllium waste. Beryllium ore is refined to various concentrations of beryllium, depending upon the end use. To refine beryllium to these concentrations, the metal is pulverized into a powder and then resolidified using "vacuum hot pressing techniques". In the event of a spill of this powder (which would be a P015 waste), the contaminated portion would be reintroduced to the refining system. Beryllium waste can also be present in the wastewater treatment sludge. Mr. Davis indicated that Brush Wellman recovered this beryllium waste through acid leaching and solvent extraction technologies. Mr. Davis indicated that the national volume of this waste was quite low, due to the economic value of the metal, and that Brush Wellman would accept any beryllium waste for recovery purposes.

Any Followup Planned: No followup planned.

P AND U WASTE CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller:	Scott Reed
Name of Contact:	Mr. Rick Stalzer, BP Chemicals
Phone Number:	(216) 586-5311
Title:	Manager of Environmental Affairs
Location:	Illinois
Date:	3/26/90
Purpose of Call:	Determination Of Actual P And U Volumes At BP America Facilities.

Report on Discussion:

Mr. Stalzer disagreed with EPA's methodology of adjusting P and U waste volumes to 100,000 gallons at the point of generation for purposes of the capacity analysis. However, BP Chemicals was unable to provide any hard data to contradict EPA's assumptions. Mr. Stalzer reported that when a spill occurred, as much of the material as possible was recovered, while unrecoverable waste was washed down a separate system with water for disposal via deepwell. Mr. Stalzer indicated that the addition of water in cleaning up these spills greatly increased the P and U volume due to the mixture rule. Mr. Stalzer also reported that lawyers for BP America and EPA were currently working to determine whether these wastes qualified for the mixture rule exception under RCRA Section 261.3(a)(2)(iv).

Any Followup Planned: No followup planned.

P AND U WASTE CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Scott Reed

Name of Contact: Mr. Gary Rowen, Hoechst Celanese Corporation

Phone Number: (201) 231-4134

Title: Director, Environmental Affairs

Location:

Date: 3/21/90

Purpose of Call: Discussion of P And U Volumes Requiring Alternative Treatment At Hoechst Celanese Facilities.

Report on Discussion:

Discussed Hoechst Celanese's concerns regarding the mixture rule exception under RCRA Section 261.3(a)(2)(iv). Mr. Rowen indicated that Hoechst Celanese was concerned that EPA was reinterpreting the mixture rule exception, disallowing deepwell injection facilities from qualifying for the de minimis exemption. Mr. Rowen reported, as in their comment letter, that currently 600 million gallons of de minimis losses were deepwell injected under the exemption, and that if EPA reinterpreted this section of the regulations, this volume would require alternative treatment.

Any Follup Planned: Discussed this issue with Randy Hill, EPA Office of General Counsel. EPA is clarifying when the mixture rule exception applies, and is not reinterpreting the exception itself. Hoechst Celanese remains exempt.

P AND U WASTE CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Scott Reed

Name of Contact: Dr. John Schneller III, American Cyanamid Company

Phone Number: (504) 431-9511

Title: General Manager, Services

Location: Westwego, LA

Date: 3/21/90

Purpose of Call: Determination Of Actual P And U Volumes At American Cyanamid.

Report on Discussion:

Discussion with Dr. Schneller verified that the volume of P and U wastes prior to aggregation with storm water runoff and washwaters was 3.3 million gallons. This volume represented a mixture of P and U waste along with water used to clean up the spill. Volume generated is unclear. This volume is part of a waste stream that is not considered hazardous waste since it qualifies for the mixture rule exception under RCRA Section 261.3(a)(2)(iv). This volume will not require alternative treatment for the Third Third land disposal restrictions.

Any Followup Planned: No followup planned.

D003 TREATMENT CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Scott Reed

Name of Contact: Mr. Richard Fortuna, Hazardous Waste Treatment Council

Phone Number: (202) 783-0870

Title: Executive Director

Location: 1440 New York Ave., N.W., Washington D.C.

Date: 4/19/90

Purpose of Call: Treatment Capacity For D003 (Reactive Cyanide) Waste.

Report on Discussion:

EPA received a comment from HWTC disagreeing with the proposed national capacity variance for deepwell-injected D003 (reactive cyanide) wastes. HWTC stated that it had identified 400 million gallons of available treatment capacity. No information regarding this capacity was provided. Attempted to contact HWTC to discuss this capacity on 4/19/90, however Mr. Fortuna was out for the day and did not return my call. Was also informed that no one else was available to discuss comments on the Third Third rule.

Any Follup Planned: No followup planned unless HWTC returns phonecall. Comment provided insufficient data for evaluation.

CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller:	Amanda Mondragon
Name of Contact:	Guy V. Johnson
Title:	Senior Counsel, Environment Group
Location:	Dupont: Wilmington, Delaware
Date:	April 27, 1990
Pupose of Call:	To determine the quantity of high-organic barium land disposed at the Dupont facility.
Report on Discussion:	Dupont's research facility generated approximately 1000 pounds (120 gallons) of high-organic barium in 1989. Unless research demands change dramatically, it is unlikely that the volume of high-organic barium generated will increase in the near future.

CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Amanda Mondragon

Name of Contact: Kim Boudreaux

Title: Unknown

Location: Ethyl Corporation: Baton Rouge, LA

Date: April 2, 1990

Pupose of Call: To determine the quantity of high-organic barium land disposed at Ethyl Corporation.

Report on Discussion: Ethyl Corporation landfilled approximately 30 tons (7,200 gallons) of high-organic barium in 1989. Ethyl Corporation sent their high organic-barium waste to the Preoria landfill in Preoria, Illinoius (EPA I.D. ILD000805812).

CHROMIUM REFRACTORY BRICK CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Arline Sheehan

Phone Number : (202) 467-7000

Title :

Location : Washington, D.C.

Date : 4/19/90

Purpose of Call: To clarify required capacity for chromium-refractory bricks.

Report on Discussion:

1. What fraction of the 9,000 to 10,000 tons of chromium brick generated annually are land-disposed?
    - Something less than 25% of the reported volume was landfilled, (speaking only of the container glass industry).
    - Many other industries (e.g. cement kilns, incinerators) also generated the brick.

2. Does GPI's estimate include the volume reportedly generated by Owens Corning Fiberglass (OCF)?
    - Estimate intended to cover the entire container glass industry, but would not cover volumes generated by other types of glass manufacturers (e.g., flat glass manufacturers).
    - A representative of Owens Brockway, a unit of Owens Illinois, was one of 6 glass industry representatives who contributed to the generation estimates.

3. Why does OCF's comment indicate that each furnace overhaul produces 50 tons of chromium refractory brick, when GPI's reported that 300 tons are generated per furnace overhaul?
    - Six industry experts concurred on the 300 ton estimate, and perhaps OCF does not produce container glass.

4. Who is the chromium refractory brick recycler in Magadore, Ohio?
    - Universal Materials Incorporated, (216) 628-2692.

5. What portion chromium refractory bricks contain high levels of phosphorous or silicates?
    - Not sure, thought none contained phosphorous.
    - Also not sure of silicate levels, but guessed that all of the refractory bricks might contain significant levels of silicates. Suggested that I refer to the recently submitted analytical data which she thought contains constituent analyses for the brick.

Any Followup Planned: None

CADMIUM BATTERY CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Mike Margolis, Kinsbursky Brothers

Phone Number : (714) 738-8516

Title :

Location : California

Date : 3/28/90

Purpose of Call: Obtain description and capacity estimates of cadmium battery recovery process

Report on Discussion:

- Kinsbursky does not have thermal recovery, but breaks and draws batteries and sells nickel and cadmium plates to primary metals producers.
- INMETCO, in Elwood City, PA has thermal process for Ni/Cd batteries.
- Kinsbursky is fully permitted to process 80,000 lb/month and can readily expand.
- Other Recyclers:

Any Followup Planned:

None

CADMIUM BATTERY CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Mike Margolis, Kinsbursky Brothers

Phone Number : (714) 738-8516

Title :

Location :

Date : 3/28/90

Purpose of Call: Obtain names of companies that buy cadmium battery parts

Report on Discussion:

The following companies buy Ni/C battery parts:

1. Big River Zinc, IL, buys cadmium plates
2. Inmetco, PA, may also buy cadmium plates
3. INCO, Ontario, CA buys nickel plates.
4. Glen Brook, Rittle, OR buys nickel plates.
5. Contact also mentioned the following lead acid battery processors.
   - GNB, Los Angeles, CA
   - RSR, Qinmetco, Los Angeles, CA
   - Comirco, Trail, British Columbia
   - GNB and RSR, Dallas, TX
   - St. Josephs, Jefferson City, MO
   - Exide Battery, Muncie, IN and Reading, PA
   - RSR in Indianapolis IN and NY
   - Sanders lead, AL

Any Followup Planned:

None

CADMIUM BATTERY CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Guy Lucie, Big River Zinc

Phone Number : (618) 274-5000

Title :

Location : Sauget, IL

Date : 4/5/90

Purpose of Call: Determine Big River Zinc's capacity for recovery cadmium from batteries

Report on Discussion:

- Big River Zinc does thermally recover cadmium from large industrial NI/Col batteries, but possible not from small ones.
- Cadmium plates are received from intermediary battery processors and Big River Zinc does not accept intact batteries or Nickel plates.
- Big River is not permitted to break batteries.
- Believes most breakers are in Europe and Far East where batteries are broken and the cadmium plates are shipped back to U.S.
- SAB Nife, a swedish company that produces batteries in Greenville, NC accepts its own batteries after they are worn out. These batteries are then sent to Sweden for recycling.
- SAB contact is Bo Norling at (919) 830-1600.
- Big River Zinc produces 3 million pounds per year of cadmium oxides for batteries and plastic stabilization.
- Big River has capacity to process 1 to 1 1/2 million pounds of cadmium plates per year.
- Kinsbursky is the only breaker in the U.S. that Mr. Lucie is aware of.

Any Followup Planned: None

CADMIUM BATTERY CAPACITY FOLLOWUP ON PUBLIC COMMENTS TO SUPPORT LDRs

PHONE LOG

Caller: Gary Light

Name of Contact: Thomas Janeck, Horsehead Resources

Phone Number : (412) 774-1020

Title :

Location : Pennsylvania

Date : 4/27/90

Purpose of Call: Identify cadmium battery recovery technology

Report on Discussion:

- HRD does not recover Cd from batteries or battery parts.
- Do recover cadmium from EAF dust and zinc concentrates (zinc, lead, and cadmium are recovered).
- Primary product is zinc.

Any Followup Planned: None

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date:	4/24/90
Caller:	Gary Light
Contact:	Donald Stone
Title:	Regional Environmental Manager
Company:	GSX
Location:	Columbia, SC
Number:	803-798-2993

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

No grinding capacity, but pug mill used in stabilization process reduces particle size and totally encapsulates wastes. Two screw conveyors that overlap mix and push waste through shafts. Believes they have probably stabilized lead slag and matte. Suggested calling Larry Johnson at 803-452-5003 for technical and specific operating information. Maximum permitted capacity is 135,000 tons per year.

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Richard Hill

Title:

Company: USPCI

Location:

Number: 713-775-7800

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

No grinding capacity at present, but class 1, 2, and 3 mod system would allow modification without major permitting modification process. Pug mills haven't worked well, a rock crusher/grinder (such as a jaw crusher) is required. USPCI has explored grinding with a smelter who wasn't interested in arranging for grinding additions. Bruce Boggs in Atlanta office has researched grinding technologies (404-424-1900).

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Gina Hartwell

Title:

Company: Peoria Disposal

Location: Peoria, IL

Number: 309-688-0760

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

Currently no grinding capacity. Should talk to Gene Mathews, not currently available. Left message for Mr. Mathews to call.

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Mark Ecsedy

Title:

Company: Environmental Waste Resources

Location: CT

Number: 203-755-2283

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

No shredding or grinding prior to stabilization.

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Tim Welsh

Title:

Company: Frontier Chemical Waste Processes, Inc.

Location:

Number: 716-285-2581

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

Only stabilization is for D001, grinding is used for fuel blending.

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date:	4/25/90
Caller:	Gary Light
Contact:	Rusty Dunn
Title:	Environmental Manager
Company:	Rollins Environmental Services
Location:	Baton Rouge, LA
Number:	504-778-3549

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

Rollins does not currently have grinding capacity for wastes destined for stabilization. A new stabilization process is being developed that will include a shaker screen, grinder, and pug mill to mix wastes with pozzolonic stabilizing agents. This process will come on line in September or October of this year.

GRINDING AND STABILIZATION CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/25/90

Caller: Gary Light

Contact: Mike Joseph

Title:

Company: Erieway, Incorporated

Location: Ohio

Number: 216-439-1257

Purpose:

To determine whether stabilization facilities have grinding capacity.

Report:

Erieway received RCRA permit in January, 1990. Conditions require eliminating waste pile and reconstructing stabilization area. Stabilization area will be closed for reconstruction. No grinding capacity now, except for a small shredder. New process is being designed for 8 to 20 tons/hour (different units). This process will include grinding, and could be on-line by the end of 1991.

Chromium Refractory Brick Capacity Followup On Public Comments to Support LDRs

Caller: Gary Light

Name of Contact: Russ Bleakney and John Onuska, INMETCO

Phone Number: 412-758-2210

Location: Ellicot City, PA

Date: April 20, 1990

Purpose of Call: To obtain description and capacity data for INMETCO's chromium brick recovery process.

Report on Discussion:

THE PROCESS

Mr. Bleakney described the system as a recovery process for iron, nickel, and chromium. Chromium-bearing refractory bricks are crushed and fed to a rotary hearth kiln. From the kiln they are sent to a submerged electric arc furnace (EAF) where they are melted and high chromium remelt alloy "pigs". These "pigs" are then sold as scrap to stainless steel manufacturers. The nonhazardous slag byproduct is (primarily alumina) is sold as road-base aggregate.

CAPACITY

Mr Bleakney estimated maximum crushing capacity at 40 tons per day or 1200 tons per month. About 200 tons per month are required for currently processed wastes. Mr. Bleakney thought that the EAF was the limiting process of the system, with about 1000 tons per month maximum and about 500 tons available capacity. INMETCO currently processes about 20 tons of chromium refractory brick per month on average.

SPECIAL RESTRICTIONS

Phosphorous presents a problem because it is contained in product. Product specifications require less than 0.055 % phosphorous. As a result, INMETCO generally accepts wastes with no more than 0.1 % phosphorous (0.03 is ideal), but high phosphorous wastes can be mixed with low to limit the phosphorous content of the product. The limit is a matter of economics in that INMETCO would have to charge more to accept high phosphorous wastes.

Economics also determine minimum chromium content requirements. The lower the chromium content the higher the price to generators. At 5% chromium or less, INMETCO's fee is generally higher than landfill disposal. Mr. Onuska pointed out that about 80% of the chromium can be recovered regardless of initial concentration (he added that byproduct waste production is about three times the volume input). INMETCO currently abides by a self imposed lower limit of 1.2% nickel and/or chromium to justify legitimate recycling.

Silica content also effects costs and economic feasibility. For each pound of silica in the feed stream, they must add a pound of lime to maintain basicity. INMETCO generally does not process materials containing higher than 9% silica. Surface cleaning can generally eliminate silica problems since most of the silica is contained in surface residue.

There are many different types of refractory bricks used by glass industry (and others); Mr. Onuska was aware of about 12 types and many more trade names. In general, INMETCO processes "chrome magnesite refractories". Which are defined as those:

1. Contain more than 20% Cr2O3;
2. Contain more than 2% MgO;
3. Contain less than 60% Al2O3;
4. Contain less than 9% silica (SiO2);
5. Contain less than 0.03% phosphorous (P2O5).

"Porous Chrome", and "Chrome Oxide" bricks can be processed, but in general they are recycled by brick manufacturers to make lower grade products (e.g. fuse chrome) because of their high chromium content. "Bonded chrome" can be processed but at a high cost due to high phosphorous content. Many types of refractory bricks have not been tested.

LEAD SMELTING CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Michael Sappington

Title:

Company: Lake Engineering (completed TSDR Survey for Sanders Lead)

Location: Atlanta, GA

Number: 404-257-9634

Purpose:

To determine capacity impacts if staging piles at secondary lead smelters are considered land disposal, and/or these piles must meet requirements for hazardous waste storage. Also, to clarify volumes and management practices for slag and matte from secondary smelters.

Report:

Mr. Sappington indicated that Sanders had applied for an exemption from the definition of solid waste for materials stored prior to recycling. He was not familiar with recent activities at Sanders, and suggested I speak to Roy Baggett, Environmental Coordinator for Sanders, at 205-566-1563.

Mr. Sappington said he was familiar with GNB's smelting operations in Columbus, GA; Frisco, TX; and Los Angeles, CA. The TX and CA facilities are currently operating under IS, and the GA facility is fully permitted. Contact did not know capacities exactly, but said that GA produces 16,000 tons per year of product and probably processes 28,000 tons/yr of batteries and 4000 to 5000 tons/yr of other wastes. Contact thought that all GNB facilities are operating at close to capacity since lead prices are high, and that adding 5 to 10 percent would be stretching. Air permit is often binding constraint.

Mr. Sappington indicated that GNB informally assumes their staging piles are exempt in permit application as in process raw materials storage. Many states consider these materials to be wastes.

LEAD SMELTING CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Roy Baggett

Title: Environmental Coordinator

Company: Sanders Lead

Location: Troy, AL

Number: 205-566-1563

Purpose: To determine capacity impacts if staging piles at secondary lead smelters are considered land disposal, and/or these piles must meet requirements for hazardous waste storage. Also, to clarify volumes and management practices for slag and matte from secondary smelters. Also to verify that none of the D006 in sanders' waste pile is actually cadmium batteries.

Report:

D006 in WASTE PILE

Mr. Baggett confirmed that none of the D006 reported in TSDR Survey was from cadmium batteries.

STAGING PILE STATUS

The staging pile is not exempt, but is permitted as hazardous waste storage area (double liner, leachate collection and treatment system etc).

CAPACITY

Last week Sanders cut 1109790 lb/day of batteries on average. Maximum is 2,000,000 lb/day. Capacity is limited by acid generation discharge from WW treatment system, and blast furnace capacity (about equal). Each of four units produces 80 tons per day of product operating at about 90% capacity. About 0.7 tons of product are produced per 1 ton of batteries, and plant operates 365 days per year. (80 tons/day/unit) x (4 units) / (0.7 tons battery per ton product) x (365 days/yr) = 166,857 tons/yr currently processed. @ 90 % capacity, maximum capacity is 185,397;and available is 18,540 tons/yr.

SLAG and MATTE

Matte is often recycled as pig iron replacement, but slag is sent to hazardous landfill. Slag contains 10 to 15% lead, and can be stabilized to meet characteristic; but must first be crushed. Sanders expects to have onsite capacity to crush and stabilize all generated slag by May 8, 1990 (already permitted). Will not accept wastes commercially.

LEAD SMELTING CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date:	4/24/90
Caller:	Gary Light
Contact:	Gerald Dumas
Title:	Environmental Affairs Director
Company:	RSR Corporation
Location:	Indianapolis, IN; City of Industry, CA; and Middletown, NY
Number:	214-631-6070

Purpose:

To determine capacity impacts if staging piles at secondary lead smelters are considered land disposal, and/or these piles must meet requirements for hazardous waste storage.

Report:

RSR operates three secondary smelting facilities: NYD030485288, CAD066233966, IND000199653. Not in TSDR Data set because completed generator survey? Main input material is auto batteries (with some industrial and other batteries) and other lead-bearing materials (e.g. battery manufacturing wastes).

STAGING PILE STATUS

All 3 facilities have considered exemption. NY has applied, and is still waiting and IN has been denied because of other state litigation. Believes problem with exemption is that states were given opportunity with little guidance from EPA. States are reluctant to act. Wastes currently stored in piles, too dense for tanks, could result in closure if prohibited by third third. NY and CA have similar storage facilities: concrete slabs with run-on/runoff collection and WWT. Materials are stored in bins. New storage building being designed for CA. At IN facility, materials are stored in building on concrete with collection system. Currently not certain if storage in building satisfies storage requirements. If so, NY and CA would build enclosures; but not possible by May 8, 1990. NY may still get permit or variance. CA is under federal and state consent order and hasn't filed for variance. Storage areas for intact batteries are currently IS.

CAPACITY

Faxing information

LEAD SMELTING CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Jeffrey Leed

Title:

Company: Exide Corporation (General Battery)

Location: Reading, PA; Dallas, TX; and Muncie, IN

Number: 215-378-0852

Purpose:

To determine capacity impacts if staging piles at secondary lead smelters are considered land disposal, and/or these piles must meet requirements for hazardous waste storage. Also, to clarify volumes and management practices for slag and matte from secondary smelters.

Report:

Exide operates 3 secondary lead smelting facilities not in TSDR: PAD990753089, TXD068999622, and IND000717959. Contact believes generator survey was submitted for PA and TX, but IN was purchased and reconstructed since 1987. Each facility has a permitted or IS storage area for spent batteries or containers (used for intact batteries).

STAGING PILE STATUS

PA facility is regulated under reuse permit, for which application was submitted more than two years ago. Waste pile area requires state DER permit and may need RCRA permit. Storage pile is specified in permit, not sure of impact of third third. Storage area has concrete surface with runoff collection, is under roof, and is operated under negative pressure.

For IN facility, variance is granted but interpretation is unclear. Currently believe exemption only applies to batteries broken on site (indigenous to process). Off-site battery parts and other lead scrap not exempt. Storage area has been included in Part B application submitted 2/90. Permit would regulate storage area as waste pile in building (includes truck wheel washing).

TX facility is currently under IS, Part B submitted 1986 (/). Staging pile addressed as waste pile. Are awaiting state action before applying for variance. Facility has been ordered to close by City of Dallas by 12/31/90 for noncompliance with recent zoning changes. Closure being appealed.

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CAPACITY

PA facility data from generator survey (1986 data).

	1986 volume processed (tons/yr)
Batteries	51,000
Non-hazardous materials	5,200
Hazardous wastes (offsite)	1,591

typical feed rate to furnace: 3340 lb/hr
maximum feed rate to furnace: 3750 lb/hr (i.e., 89% utilized)

TX facility data from generator survey (1986 data)

	1986 volume processed (tons/yr)
Batteries	26,000
Non-hazardous materials	1,416
Hazardous Wastes	769

typical and maximum feed rate to furnace: 11,667 lb/hr (i.e., 100% utilized)

IN Facility (estimated)

Goal within 1 year to process 20,000 batteries per day (= 95,000 tons/yr). More capacity is technically possible. Currently processing between 8000 and 10,000 batteries/day (i.e., 50% utilized).

SLAG AND MATTE

Some slag greater than 2.5% lead. Currently looking for ways to cycle slag back to smelter. If possible, this will reduce capacity. PA facility generates 8000 to 9000 tons to slag and matte per year, which is sent to an out-of-state hazardous waste landfill. No crushing or grinding capacity is available on-site-- no room for baghouses, and grinding produces dust problems. Should use same slag and matte ratios to determine generation at other facilities.

LEAD SMELTING CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date: 4/24/90

Caller: Gary Light

Contact: Ken Pike

Title:

Company: East Penn Manufacturing

Location: PA

Number: 215-682-6361

Purpose:

To determine capacity impacts if staging piles at secondary lead smelters are considered land disposal, and/or these piles must meet requirements for hazardous waste storage. Also, to clarify volumes and management practices for slag and matte from secondary smelters.

Report:

STAGING PILE STATUS

Intact batteries stored on ground, but very few are stored before breaking. Broken battery parts and other materials stored in fully permitted totally enclosed material storage area (with runoff collection and WWT).

CAPACITY

Second furnace added to single facility. CUrrently operating at maximum permitted capacity of 42,000 short tons/yr product. (equivalent to about 4 million batteries). Could produce up to 60,000 tons/yr, but would require permit mod.

SLAG AND MATTE

Slag and matte currently sent to hazardous waste landfill in Michigan. Has unsuccessfully tried many thermal recovery techniques for slag and matte. Proposed recovery standard would force facility to close. Fixation is possible. About 20 to 25 tons/day of slag and matte generated 10 days out of every 14 days. Equivalent of 15 to 20% product output generated as slag and matte, believed typical of industry (using reverbetory furnace followed by blast furnace). Exception may be RSR who replaced blast furnace with electric arc furnace and generates slag that allegedly passes TCLP as nonhazardous. Stabilization would require grinding to less than 1/2 inch in diameter, current crusher (previously used to grind slag into cement aggregate for use onsite) can't reach 1/2 inch diameter. Readily available equipment (roll clone crusher) would have to replace existing jaw crusher. Permit modification would take about 18 months, and construction would take about 4 to 6 months.

LEAD SMELTING CAPACITY FOLLOWUP CALLS
THIRD THIRD RULE COMMENTS

Date:	4/24/90
Caller:	Gary Light
Contact:	Glenn Hasse
Title:	Vice President
Company:	Schuylkill Metals
Location:	Baton Rouge, LA and MO
Number:	504-775-3040

Purpose:

To determine capacity impacts if staging piles at secondary lead smelters are considered land disposal, and/or these piles must meet requirements for hazardous waste storage. Also, to clarify volumes and management practices for slag and matte from secondary smelters.

Report:

STAGING PILE STATUS

MO facility has permitted waste pile. LA facility is under IS, and variance petition has been in process since 1986. Problem is overburden of state. Variance was granted for battery parts only before 1986, trying now to get variance redefined for current operation. Believes currently exempt by variance but not certain. State just called in Part B application. MO storage area is about the same as LA. Would like national variance for waste piles.

CAPACITY

New furnace added to LA facility added 60,000 to 70,000 tons/yr of capacity to estimates in TSDR Survey. Currently 100% utilized.

SLAG AND MATTE

MO generates about 30 tons/day and LA about 60 tons/day (30 to 70% landfilled). Operates 7 days per week. No grinding capacity in industry or at landfills. Solidified "buttons" currently broken up with sledge hammers prior to disposal. Both facilities dispose of slag and matte in on-site landfills.

STERLING CHEMICALS

February 14, 1990

Ms. Jo-Ann Bassie
Office of Solid Waste (OS-322)
U. S. Environmental Protection Agency
401 M Street S.W.
Washington, DC 20460

Dear Ms. Bassie,

Thank you for speaking with me on January 30 regarding Sterling Chemicals comments that were submitted on January 8, 1990. I have enclosed excerpts of these comments with the areas discussed with you highlighted. I trust that the data provided will be carefully reviewed and used to justify the requested national capacity variances (NCV).

My specific requests made in that conversation were:

1) A NCV for underground injection of D003a and D002 nonwastewater be granted,

2) Resolution of the NCV/MTR problem with D003a and D002 wastewaters,

3) Once 2) is resolved, a NCV for D003a and D002 wastewaters,

4) Careful review of the Sterling comments.

I believe that the need for each of the above requests are well documented in Sterling Chemicals' comments. Please contact me at (409) 942-3129 if you require clarification of the data.

Sincerely,

David W. Dunn

David W. Dunn, P.E.
Environmental Affairs Manager

/pm
Attachment

cc: Francoise Brassiere - USEPA-ODW
Bruce Kobelski - USEPA-ODW
Mike Cook - USEPA-ODW

DWD005.let

Sterling Chemicals, Inc.
[illegible]
[illegible]
[illegible]

Failing reconsideration of the standard, Sterling Chemicals requests a national capacity variance for this class of hazardous waste. See discussion in § A.3. above concerning the questionable value of a variance, [illegible] 6 million gallon waste stream for Sterling Chemicals alone would require further treatment to meet the proposed BDAT standards, and the Agency lists only 2 million gallons per year of nationwide available capacity (Table III B.1.(c)).

Sterling Chemicals appreciates the opportunity to comment on the proposed rule.

Very truly yours,

David W Dunn jlk

David W. Dunn, P.E.
Environmental Affairs Manager
Sterling Chemicals, Inc.

APPENDIX M

ANALYSIS OF LARGE VOLUME UNDERGROUND INJECTED P AND U CODED WASTES

APPENDIX M

ANALYSIS OF LARGE VOLUME UNDERGROUND INJECTED P AND U CODED WASTES

In support of the Third Third final rule, the Agency conducted a special analysis of certain large volume P and U coded waste streams reported as deepwell injected in the TSDR Survey. The purpose of this analysis was to gather additional data on the generation, characteristics, and current management of these waste streams. The Agency suspected that these streams, as generated, were actually small volumes of hazardous wastes mixed with large volumes of aqueous wastes, therefore making the entire mixture hazardous.

The following facility summaries document the results of the analysis for each of the contacted facilities.

- Aristech Chemical Corporation. The facility contact stated that its P and U wastes are generated separately but share a common collection system. Furthermore, he said that some of the P and U wastes are "off-spec" products but most are spill residues. As injected, he said the wastes are composed of small amounts of P and U waste contaminated with large volumes of nonhazardous process wastewaters (the contact was unable to provide the percentage that was hazardous vs. nonhazardous). In addition, as part of the facility's wastewater treatment system prior to the well, insoluble organics are removed and recycled or reused as fuel. Finally, he said the facility was investigating whether the waste may qualify for a "de minimis" exemption.

- American Cyanamid. The contact stated that as injected the stream is 99 percent water and only hazardous because of the mixture rule. She also said many of the U codes may qualify for the de minimis exemption, but they carried the codes to be safe. She said the waste is mainly generated from storm water, minor spills, and backwashing the well's filters.

- Rubison Incorporated. The contact stated that the P and U coded waste streams are mostly water as injected (although he did not know the percentage) and that the wastes are hazardous because of the mixture rule. He said the wastes are generated by minor spills, process upsets, and as scrubber water. He said they do analyze the waste prior to injection and the concentration of P and U code constituents are typically in the low part per million range.

- Calanese Chemical Company. Although this facility refused to provide detailed information without a formal written request, the contact stated that their underground injected wastes consisted of very small portions of hazardous waste mixed with large volumes of water.

- Cecos International. The facility contact stated that this waste is rainwater drained from the surface of an active landfill (it is not leachate which has percolated through a closed landfill). He said the stream is virtually all rainwater and the concentration of the U coded constituents is less than 50 parts per million. The waste is received from offsite.

In addition, one CBI facility was contacted. The facility contact stated that the waste stream reported as injected in the TSDR Survey was the result of the cleanout of a surface impoundment and consisted mainly of rainwater. He said they are still injecting wastes but that they are exclusively mixture rule wastes consisting mostly of water.

Based on the information received from these facilities, EPA believes that the actual volume of P and U wastes generated by these facilities is significantly less than the volume reported as underground injected. The Agency believes that 100,000 gallons per year is a reasonable upper estimate of the volume of these P and U wastes that are generated prior to mixture with other wastes.

Because the land disposal restrictions apply to wastes at the point of generation, the Agency believes that only the originally generated P and U wastes volumes should be used to estimate required capacity. Consequently, the Agency used 100,000 gallons per year per code as an upper estimate of the required capacity for P and U wastes at these facilities.